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ORIGINAL PAPER

Ethnography and the Internet: Taking Account of Emerging Technological Landscapes

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Abstract This article explores the strengths of ethnography as a methodology for exploring the complex social landscape of the contemporary Internet. The article outlines the historical development of the Internet, from Web 1.0 to a participatory Web 2.0 embedded within everyday life and ultimately to the prospect of an autonomous Internet of Things. The benefits of an ethnographic approach for understanding such developments in depth and examining taken-for-granted assumptions are outlined alongside an account of some of the challenges that digital technologies pose for an ethnographic methodology. Amongst these challenges are the difficulties inherent in mapping out a field site that effectively captures the complexity of online/offline connections and of developing a sufficient degree of immersion and co-presence for a rich understanding to be attained. Finally, the challenges offered by the emergence of mobile Internet, algorithmic filtering of information and unpredictable flows of data are explored. It is suggested that the ethnographer of the Internet can usefully position their task as being to explore a socially constructed yet technologically mediated landscape, immersing themselves in it, interrogating how others experience it and mapping the ways in which it becomes meaningful to those who navigate its complexities.

Keywords Internet · Ethnography · Social media · Participant observation · Methodology · Community · Internet of Things · Field site · Landscape · Algorithm

1 Introduction

Ethnography has played a key role in developing our understanding of the social significance of the Internet, ever since it began to be a mainstream technology in the 1990s. This article reviews the contribution made by ethnography to our

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understanding of the Internet in the succeeding decades and then moves on to consider what the future holds. As use of mobile and wearable devices proliferates, as algorithms increasingly filter what we see online and make decisions on our behalf and as an Internet of Things begins to pervade our lives with autonomously intelligent, communicating devices, how is the ethnographer to respond? What is there for the ethnographer to observe in this new form of Internet and how does ethnographic fieldwork need to adapt in order to keep up? Has the contemporary Internet simply become too complex in its technological development for ethnography to have a role? This article argues that there is still a considerable potential for ethnography to contribute to understanding the Internet, provided that ethnographers develop appropriate forms of sensitivity to the complex technological landscape that surrounds us.

The ethnographic methodology traditionally uses the immersion of the ethnographer within a setting as a means to understand the perspective of those who live within it. The body of the ethnographer is the research instrument, sensing the surroundings, recording impressions and turning them into a theoretically informed, rich account of cultural practice. By being immersed in the setting, the ethnographer is able to go beyond taken-for-granted assumptions about the way of life under observation and to develop instead a detailed insight into how exactly this way of life works. Ethnographers aim to adopt a perspective that is simultaneously that of a stranger finding everything about a setting worthy of note and able to document it, and at the same time that of an insider who deeply understands and embodies the norms, values and practices of the setting. As applied to the Internet, ethnography has been able to develop an immersive understanding of social formations that emerge within online platforms, documenting their distinctive culture and highlighting the significance of online forms of co-presence in developing shared experience. Ethnographers of the Internet use the same technologies as those that they study, taking part in online interactions and becoming immersed in online spaces.

Applying ethnography to the Internet in this way has considerable strengths as a means to question taken-for-granted assumptions about what the Internet means, to suspend judgment and to explore what is going on from the perspectives of those involved. In particular, this approach enables us to avoid an overly simplistic equation of technological form with social outcome. While it is possible for formations sufficiently cohesive to be termed communities to emerge within online spaces, it is clear that the technology, in itself, does not guarantee that this will be the case. The technology of the Internet and the various social media platforms that depend upon it makes it possible for various kinds of social formation to emerge, but this is not an instance of technological determinism. An ethnographic approach allows us to understand what is there on its own terms without taking a normative stance on what should be there or a deterministic attitude to what must be there (Coleman 2010). An ethnographer of the Internet remains sceptical about claims that are made about the proper use of technologies and their inherent capacities, wishing instead to find how users make sense of them for themselves.

Ethnography, then, asks that we immerse ourselves within a setting in order to understand it from the perspective of those involved. It has not, however, been

straightforward simply to translate the practices of a conventional form of ethnography developed for offline interactions into the online sphere. There have been challenges along the way in determining exactly how ethnographers should become immersed in online settings and how to take account of movement between online and offline spaces and between different online activities. People do not live wholly online, and ethnographers have found themselves wishing to explore connections between various aspects of people's lives only some of which are observable online. This complexity presents some difficulties for an ethnographer in identifying a field site and in deciding how to interpret observable phenomena. The next section of this article reviews the emergence of the concept of online community as a form of field site and then charts the development of other, more spatially complex notions of field sites involving the Internet. The following section of this article then explores how the challenge of developing an appropriate degree of ethnographic immersion in online interactions has been faced to date and what future difficulties we face as the devices on which the Internet is used multiply. After this, the next section explores some challenges on the horizon as online activities take on a new form in a mobile, app-based and embedded Internet that is often taking decisions on our behalf through algorithmic agency. These challenges, it is argued, can be faced by drawing on some insights from ethnographic research in quite different contexts. An approach to ethnography developed in the forests of Borneo turns out to be surprisingly inspirational for finding solutions to the methodological problems posed by the contemporary Internet. The conclusion draws together some final thoughts on fruitful approaches for ethnography of the contemporary Internet, focused on the need for active engagement rather than passive observation.

2 Online Community and Beyond

In order to arrive at a view on how we should conduct ethnographies of the contemporary Internet, it is useful to consider how the field has developed since the first online ethnographies were conducted in the 1990s. A common starting point with which to begin such a history is Baym's (1995, 2000) study of a soap opera discussion group. In this study, Baym pioneered the ethnography of online discussion groups and led the way in developing our understanding of the potential for cultural complexity within an online space. As an ethnographer, Baym participated in the daily activities of the group, observing discussions, conducting interviews and carrying out surveys in order to develop insights into the norms and values of the group and to document its practices. She also carried out a systematic content analysis of threads of messages to identify core themes and styles of interaction. While she followed the group when they did occasionally meet up face-to-face, the majority of Baym's study was conducted online and involved observing, or asking questions about the public online interactions of the group. A key outcome of Baym's ethnographic immersion in the setting was her argument that the group was sufficiently socially cohesive to be considered a community.

Baym focused her attentions on one online discussion group, immersing herself within it and studying it through the perspective of an active participant in the group. Subsequent ethnographers have deployed similar approaches to study other online platforms: Boellstorff (2008), for example, conducted an ethnographic study within the virtual reality platform Second Life. The prolonged immersion within the setting mirrors a traditional anthropological notion of field work and allows the ethnographer to experience a relatively self-contained setting on its own terms by combining observation of activities within the setting, direct experience of the setting and asking participants about their activities and the sense that they make of them. If the goal is an in-depth understanding of one group, contained largely within a single software platform, then this is a productive approach to take. A focus on one bounded setting has the advantage of allowing for an in-depth study and also respects what appear to be the natural boundaries of the setting. However, this model of online ethnography has increasingly been supplemented by other approaches that take a more open view on the boundaries of the field site, reflecting in large part some significant developments in the technologies of the Internet and the way that people use them.

The advent of social media platforms, in the shift often termed Web 2.0 (O'Reilly 2005) or the participatory Web (Blank and Reisdorf 2012), has changed the social landscape of the Internet. Rather than self-contained discussion groups that contain their own distinctive cultures, much of the user experience of this version of the Internet has become at once more individualised, focused on a personally curated collection of personal connections, and at the same time more embedded in the fabric of the everyday lives of users. It has become much harder to think of the Internet as a separate domain from everyday life than was the case in the 1990s and much harder to think of the Internet as comprising cohesive online communities existing in discrete spaces. This does not mean that the online community has disappeared altogether: Baym (2007) argues that communities still form online, but may be distributed across multiple online platforms and offline spaces and comprise complex patterns of fluid interconnections. However, this form of connection offers a challenge to the ethnographer seeking immersion, since it is not longer quite so clear where to immerse oneself and what the boundaries of the phenomenon under study might be (Hine 2008). The sets of connections that bind people together online and offline have become spatially complex, and while sometimes an online field site confined within a single platform may be appropriate (Boellstorff 2010), it is no longer obvious that immersing oneself in a particular online space is the most fruitful approach for an ethnographer to take.

In response to the increasing spatial complexity of digital technologies, a variety of approaches to defining the field sites for ethnography of the Internet have emerged. These include Hine's (2007) connective ethnography, Burrell's (2009) network ethnography, Leander and McKim's (2003) mobile tracing of adolescent activities and Farnsworth and Austrin's (2010) ethnography of poker across a series of online sites. Many such approaches are inspired by Marcus'(1995, 1998, 2012) invitation to a multi-sited ethnography that exhorts researchers to follow phenomena of interest across sites in order to develop an understanding of the myriad forms of complex and indeterminate connection that characterise contemporary life. These

approaches rely upon identifying a phenomenon of interest and exploring its manifestations in different spaces, beginning with a decision on what to study instead of where it is to be studied. Rather than being able to define a field site or set of field sites in advance, such approaches often take a more exploratory route to finding out, through immersion, what may be the significant connections to follow. The field site therefore emerges in the course of the study and often spans both online and offline activities, as the ethnographer finds that a particular online activity makes sense in so far as it is embedded within an offline domain and vice versa.

Running in parallel with this development of multi-sited ethnographic approaches to online space has been a strand of work focused on developing anthropological understandings of the Internet derived from a place-based approach. Starting with Miller and Slater's (2000) ethnography of the Internet in Trinidad, a form of digital anthropology (Horst and Miller 2013) has emerged that begins with the people in a chosen place and follows them as they make sense of the Internet's role in their lives, going online with them wherever they may go. This approach encourages the ethnographer to avoid making generalizations about the impacts of the Internet on cultures, exploring instead how culture shapes the Internet. Miller's (2011) study of Facebook in Trinidad, for example, brings out the specificities of the uniquely Trinidadian use of this platform. Again, the field site is emergent, since the ethnographer cannot know in advance what online spaces will be significant to the people who form the focus of the study. Bringing together the multi-sited approach with the anthropological sensitivity to people's sense-making strategies, ethnographers of contemporary social movements often find that their field site spans both online and offline domains connected in an indeterminate fashion (Postill and Pink 2012) quite unique to the context and goals of the particular group of people being studied.

While ethnographers study the activities of people, ethnographic attention has also turned to aspects of the online experience that may not be immediately obvious as human activities for the ethnographer to observe such as links between websites and the contents of databases. Beaulieu and Simakova (2006) argue for ethnographic attention to the hyperlink as a manifestation of a form of sociality while Geiger and Ribes (2011) suggest that ethnographers can usefully attend to any of the traces that online activities leave behind such as log files and transaction records. These ethnographers explore how users of the Internet make sense of one another's activities through traces that are left behind. Online traces can also give ethnographers leads on useful connections to explore in mapping out the field. Hine (2011), for example, uses the search engine as a tool to identify sites to explore in an ethnography of television as manifested on the Internet. Some studies combine quantitative and quantitative approaches, using analysis of large-scale datasets to direct attention to areas of the field for more in-depth qualitative exploration (Howard 2002; Dirksen et al. 2010). Ethnographers of the contemporary Internet have a variety of forms of data to draw upon and when they set out to observe the activities of participants they may benefit from being quite creative in their definitions of "activities" and "participants".

Ethnography of the Internet has therefore built on the traditions of ethnographic study in taking seriously how people experience their lives and avoiding making a priori assumptions about the form these lives should take. Within this basic ethnographic commitment, as the Internet has developed so too has the form that ethnography of the Internet has taken. The model of a community-focused online-only study has been largely superseded by more spatially complex studies that combine online and offline sites and that explore the contingent connections between these various spaces. Various forms of data have come within the ethnographic remit as they offer up traces of the connections between people and the sense that they make of one another's activities. Ethnographers of the Internet have become imaginative about what counts as data and exploratory in their approach to the nature of the field. Even these exploratory approaches, however, face challenges as the Internet continues to develop in forms that deviate even further from a model of discrete field sites open to the ethnographer's gaze. Increasingly, online activities are not directly observable, as enclosed password-protected spaces, proprietary ownership and apps that promote private interactions proliferate (Lievrouw 2012). The model of an observable, immersive Internet seems increasingly outdated. It is questionable, therefore, how far even a networked and multi-sited version of online ethnography is sustainable, if much of what people do online is out of sight to any but those directly involved. In the next section, the classic ethnographic reliance on observation and participation is examined, with the goal of identifying ways to sustain an ethnographic exploration of this increasingly privatised and fragmented Internet.

3 Observation and Participation

Ethnography classically involves the ethnographer's active presence within the setting, as outlined in a widely read text on the subject:

> In its most characteristic form…[ethnography] involves the ethnographer participating, overtly or covertly, in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions- in fact, collecting whatever data are available to throw light on the issues that are the focus of the research (Hammersley and Atkinson 1995: 1)

The ethnographer's presence in the setting allows them to live alongside participants both seeing what they do and wherever possible experiencing what they experience. The ethnographer does not necessarily become a full participant. There are some insider ethnographies, where the ethnographer begins and continues as a full participant in the setting in their own right, but in most cases the ethnographer's capacity for participation is limited in some way because of their level of expertise or their background. In any case, taking part purely because one wants to study the setting is a motivation that sets the ethnographer apart from an ordinary participant there for some intrinsic motivation concerned with the setting in itself. If the ethnographer is not a full participant, however, at least taking part alongside the full participants allows them to observe at close quarters and to see some of what the

participants take for granted about their way of life to an extent that they may be unable to verbalise what it is exactly that they do. This close observation is supplemented by being able to ask questions about what has been observed, deepening understanding and building interpretations.

Participation is then an important part of the epistemological apparatus of ethnography, as is observation. Ethnographers see and do, they take note and question, and they interact and interpret. The purchase offered by ethnographic presence involves being able to see what people are doing, to feel how it feels to do this and to ask questions about what it means. Throughout the history of ethnography in online spaces, there have been concerns about the nature of the ethnographic presence that may be achieved in an online field site and the extent to which online interactions are sufficient to fulfil the needs of ethnographers for a fully rounded understanding of life according to the perspective of participants (Bengtsson 2014). The response to this concern depends somewhat on the focus of the ethnography. Paccagnella (1997) argues that online observation alone may be insufficient to allow for a robust view of other aspects of participant's lives, and where it is important for the study to have certainty in this regard ethnographers may need to triangulate online fieldwork with an offline counterpart. Hine (2000), however, argues that where the goal is to understand an online space on its own terms it may be important not to rush to triangulate, but instead to focus on how participants themselves judge the authenticity of one another's claims. Paccagnella (1997) stresses the importance of ethnographic presence as a route to authentic facts while Hine (2000) stresses ethnographic presence as a means to develop a reflexive insight into the participants' perspectives. The balance between these considerations will inevitably vary according to the specific goals of any particular study.

Ethnographic presence is, thus, an important part of the epistemological apparatus of ethnography but it takes a variable form in online ethnographies. Garcia et al. (2009) stress that it remains important for this to be an active presence even online, allowing the ethnographer to question and interact rather than simply observing and assuming that they understand what an action means. Merely lurking and observing activities unnoticed by participants are not, they argue, enough. In an online space, this means that an ethnographer has to find a way to be active using the technologies that are available for communication with participants in that space in order to create a dialogue that allows for mutual understandings to develop. This might involve using the public space of a forum or social media profile but also include private interactions using emails and private messaging. An online ethnographer needs to develop a sense of the appropriate etiquette for each mode of interaction. Online ethnographers also need to develop an understanding of the back channels of communication that participants habitually use. While there may be a rich observable culture in the public online space, it is also important to be aware that there may be private interactions going on in back channels that are also crucial for the participants' experience of the space. Only by interacting with participants, developing rapport and gaining their trust can an online ethnographer develop the rounded perspective that comes from grasping all of the ways in which participants know each other.

While the conventions of interaction may take some learning in an online space, and even the technologies themselves may need to be learned, by contrast we tend take for granted that in a face-to-face setting an ethnographer will have the resources to be an active observer who is co-present with participants. There may be some obstacles in the form of developing trust and rapport with participants and gaining acceptance for the questions from the outsider ethnographer, but we tend to assume that the ethnographer (language barriers permitting) will have the resources to communicate with people who are physically co-present. Just as in online settings, however, the ethnographer's presence may not extend straight away to significant back channels. Again, trust and rapport may need to be built before the ethnographer begins to grasp what goes on behind the scenes, in one-to-one exchanges and through other media. Not everything that a face-to-face ethnographer needs to know will be immediately available through observation alone and effective presence is as much about forming relationships as it is about physically being there.

Ethnographers both online and offline therefore face a set of challenges concerning development of effective presence to allow them to participate effectively and observe appropriately. When ethnography moves beyond single spaces, these challenges may be compounded by the difficulty of working out how the various media of interaction and forms of space connect together in people's lives. An ethnographer who wants to find out how people integrate their offline and online lives and how they switch between them faces some additional challenges in finding appropriate forms of co-presence to make key aspects of these activities observable and open to interrogation (Cooper et al. 1995; Star 1999). Looking over someone's shoulder as they do something online can feel a poor substitute for co-presence, as we find ourselves in the same physical space as them but unable to quite see enough of what they do to make sense of it and inhibited from asking questions through fear of interrupting and breaking the flow. In such circumstances adopting an overt apprentice role and shadowing a participant as they narrate their activities may be a more effective form of co-presence. Alternatively, relying on recording activities both online and offline and then subsequently working through them with participants may be a useful form of co-presence that makes activities both observable and the topic of dialogue with participants, albeit not at the same time (Lahlou 2011; Bhatt and de Roock 2014).

Whether dependent on the sustained engagement of the ethnographer in the online or offline setting or on the use of multiple forms of recording technology and subsequent collaborative exploration with participants, these approaches are all dependent to some extent on there being a predictable set of observable interactions to be co-present with and interrogate. Unfortunately for the ethnographer, such forms of interaction are increasingly being supplemented or even replaced by unpredictable, secretive, sporadic and ephemeral forms of online interaction. When apps such as are used to interact there may be no observable trace and no apparent "place" for the ethnographer to hang out and observe, simply a participant dwelling for a brief time over a smartphone screen before moving onto another activity. Co-presence in such an ephemeral setting becomes hard to conceptualise. The ethnographer can certainly learn a lot by using the same technologies as participants

do and reflecting on the nature of the co-presence that they are able to achieve and noting its limitations. Such a co-presence in terms of participation lacks, however, a significant amount in terms of observability, since the ethnographer may see only those interactions that directly involve themselves. Setting up software to record all of the activities on a participants' phone may be an alternative solution that gains in observability but lacks somewhat in exposure to the subjective experience of being a participant.

Co-presence in a full ethnographic sense is therefore challenging to achieve in an age of unpredictable and ephemeral interactions. A balance needs to be struck between approaches: observing what there is that is available to be observed and learning from the subjective experience of silences and frustrations that this entails; participating in one's own right and learning what there is to be learnt from this form of subjective experience; and asking participants retrospective questions about their experiences while accepting the inherent artificiality of asking people to verbalise features of their unspoken practices and assumptions. There is no single solution that fulfils all the necessary qualities of ethnographic co-presence, so the most fruitful approach may be to alternative between positions and accept that each exposes only a facet (Mason 2011) of the overall situation.

While considering co-presence it is also important to take note of the significance of positionality when conducting ethnographies that involve online interactions. Returning to the discussion of online community in the previous section, it is important to note that just because an online space may look like a community according to certain criteria does not mean that everyone passing that way will experience it as a community. The power of search engines to find material on the Internet means that what to some participants may be a deeply significant social space may to someone conducting a search just be one message that crops up on a list of search results. Alternatively, an online support group in which some active members invest huge amounts of time and emotion may be to someone lurking there akin to a soap opera whose events they follow without any deep emotional commitment. When interpreting online activities, it is important to recognise that these activities are meaningful from specific, located standpoints and do not have an inherent meaning that transcends positioning. An ethnographer needs to decide whose position they are seeking to comprehend. Markham (1998) argued in relation to the Internet that according to the perspective of its users it could provide either a tool for getting things done or place to go to or more fundamentally, a way of being. This multiple conceptualisation of the Internet means that what appears from some positions to be a collective online space may be for others a less emotionally charged experience.

In the times of the Chicago School ethnographers, it was relatively straightforward for Robert Park to send students out to do "real research" through first-hand observation within the city settings that he could quite confidently expect were there waiting to be observed. In contemporary times, with pervasive digital technologies providing a multitude of more or less ephemeral modes of communication, it is not so straightforward for the ethnographer to work out where the setting might be or what counts as first-hand observation. True to the long-standing ethnographic principles of finding out first-hand how a way of life feels to those participating in it,

contemporary ethnographers need a considerable ingenuity to work out where to go and what to do when they get there and how to be effective participants and observers. In the following section, the question of what is amenable to ethnographic observation is pursued further through the notion of landscape, shedding light on effective strategies for ethnography of the contemporary Internet by learning from how ethnographers other situations have grappled with similar questions.

4 Platformed Sociality, Mobile Devices and Algorithmic Power as Landscape

The contemporary technological landscape of the Internet is complex, often fragmented and hard to grasp in any meaningful totality. Where back in the 1990s there was a relatively limited array of forms of interaction now there are multiple platforms, many of them under proprietary ownership with their own set of features and terms of use. Devices too have proliferated as smartphones and tablets have arrived to supplement desktop computers and portable laptops. Digital technologies have accompanied us into more and more aspects of our lives, as wearable devices provide us with information wherever we go and at the same time record and transmit aspects of our daily existence from our location and our interests to our waking and our sleeping. In the early days of the Internet we may have felt relatively in control of our own interactions, knowing what we sent and to whom, but now the data that we give off are arguably more significant than the data that we knowingly give out. Where once we sought out information and were frustrated when we could not find it, now information is thrust upon us, and is filtered by algorithms that read our behaviours and teach us what to want next. The Internet of Things surrounds us with an increasing array of devices that communicate online on our behalf and make decisions without our intervention. This technological landscape cries out for an ethnographic interrogation to explore the ways of living that emerge in response.

While the task of ethnographically interrogating the emerging ways of living in digital times is important, it is also methodologically challenging. As outlined above, achieving an appropriate form of co-presence with the participants in these complex and multiply mediated ways of living requires flexibility and adaptability. This challenge is compounded by the difficulty in observing some of the most significant features of contemporary digital technologies. While we know that algorithms are taking decisions on our behalf, that data are being gathered and shared, that information is filtered and our online environments are moulding themselves to our anticipated desires, it remains impossible for us as individual users to work out exactly what is happening on our behalf. This layer of technological functioning remains unobservable to ethnographers and ordinary users alike. If we set out to expose exactly what is going on and to specify every data flow and piece of algorithmic agency that influences our experiences, then we are ultimately doomed to failure. Simply too much is going on and too little is openly shared and documented.

If the ethnographer cannot always be an effective data detective (although Ebeling (2016) shows us that this can be possible with considerable investment of time, imagination and effort), then what should we do in such circumstances? One possible solution, inspired by ethnography in quite different circumstances, is to treat this complex digital environment as a landscape that people simultaneously navigate and bring into being. Crucially, for an ethnographer, a landscape never stands simply as an objective physical phenomenon. For an ethnographer, landscape is thoroughly social: people make it real to one another in interaction, interpret it for one another and make it meaningful in their daily practices. This approach is captured evocatively by Tsing (2005) in her ethnography of global connections in the Meratus forests of Borneo. Tsing describes making a shift from seeing the forest as a natural phenomenon comprised of plants and animals to understanding it as a social phenomenon:

> It was only by walking and working with Meratus Dayaks that I learned to see the forest differently. The forest they showed me was a terrain of personal biography and community history. […] People read the landscape for its social as well as its natural stories (Tsing 2005: xi)

By analogy, it is possible to think of this complex array of digital technologies as a landscape that we make real to one another in our actions and navigate as social beings. An ethnographer in this form of landscape needs to work with and walk alongside people as they live their lives, focusing on the points when aspects of these technologies and the choices they make for us become remarkable and where they sink unnoticed into the fabric of our lives. The task of the ethnographer becomes not one of mapping the technological landscape in any objective sense but rather to capture the subjective experience of living in such a landscape.

It is to be expected that knowledge of this digital landscape and the ability to act upon our knowledge of it will be socially patterned. Some people we encounter will be subject to choices made on their behalf while others will exert some form of control over these choices. Some will experience themselves as marginalized, excluded or discriminated against, and others will feel empowered. To some extent, experiences of this landscape will be thoroughly personal, but they will also be socially positioned and reflect other prevailing forms of inequality. Some of the stories that people have about their experience of digital technologies and their experience in relation to them will emerge quite readily in conversations. Other aspects of experience with digital technologies will be less readily articulated as simply too mundane and unremarkable and ethnographers will need to develop techniques to bring them to the surface, such as the diaries and video re-enactments advocated by Pink et al. (2015) to uncover taken-for-granted aspects of practices that embed digital technologies in people's lives.

Informing the individually situated experience of digital technologies there will also be collectively defined meanings for aspects of these digital landscapes and these too will merit ethnographic attention. Our experience of digital technologies, as with any technology, has always been mediated by the metaphors we use to explain it to one another (Stefik 1997). I have argued previously (Hine 2000) that, just as much as the Internet is a site for cultural interactions, so too is it a cultural

artefact that acquires meaning through the way that it is represented in interpersonal interactions and in the mass media. Ethnographers of the contemporary Internet do well to pay attention to the representations of digital technologies that are made in our mass media and that we share with one another, as these help to shape our expectations and inform the way that we position ourselves in relation to these technologies. Ethnographers need to take account of the prevailing cultural constructions of what the technology is and what should be done with it, listening to the stories society tells itself about what it is and where it is going.

It is hard to imagine an ethnography of the Internet of Things, if by that we mean that we want to understand the cultural environment inhabited by intelligent toasters, fridges that order their own groceries and environmental sensors. One cannot interview a toaster to find out how it feels to be online or observe an online community of fridges. One can, however, focus on the experience of the people who live with such technologies, finding out how these technologies become meaningful in their interactions with one another and their experience of themselves in relation to the world at large. To do so requires a return to some very recognisable forms of ethnographic immersion: spending long period of time living amongst people, developing techniques to enable them to articulate what otherwise goes unremarked about their lives, learning from them as the experts on their way of life and coming to understand the technological landscape as it becomes real and meaningful to them.

5 Conclusion

This article has reviewed some of the achievements of ethnography used as a means to understand the Internet and has explored some of the methodological challenges that have been faced and continue to be faced as the Internet takes on new forms. The core principles of ethnographic methodology, as a means to develop an understanding of a setting on its own terms through a direct experience of that setting remains intact, although some renegotiation of the nature of settings and of experiences has been required along the way. In some incarnations of the Internet, it has been tempting for ethnographers to take on a passive role, setting out simply to observe culture as it plays out online without getting involved. This has proved problematic for two reasons. Firstly, to become a passive ethnographer is to miss out on much of the epistemic purchase offered by immersion. Being there in the setting offers so much in terms of the ability to go beneath the surface of observable interactions and find out what sustains them and in the opportunities that presence in the setting offers to clarify, question, discuss and explore emerging understandings. Ethnography thrives as an active, and interactive approach that goes far beyond lurking. Secondly, it turns out that the existence of a public, observable set of online interactions upon which this passive form of online ethnography relied was after all a quite limited phenomenon. As the Internet has evolved, less and less of the interactions mediated by this technology are publicly observable to all comers. If we were to restrict ethnography to this kind of publicly observable space, we would miss out on a wide array of digital interactions that are highly significant for their

participants. Accessing this kind of interaction demands an active approach that renders settings observable and attends to their specific qualities on their own terms.

Ethnography for the contemporary Internet remains highly recognisable in comparison with ethnography of other times and in other, less obviously technologically mediated settings. Even while the technologies bring methodological challenges, it is questionable whether it remains useful in any way for a specially demarcated "online ethnography" to be identified (Hine 2015). As the nature of digital technologies and the interactions that they support shifts, a return to more traditional forms of ethnographic engagement may in fact be prompted. If it is not possible simply to go online and find a field site but it is instead necessary to forge strong relationships with people who teach one about the digital landscape from their perspective and guide one through it, then ethnography of the Internet becomes less clearly distinguishable from ethnography in any other setting. A commitment to sustained in dwelling in an unpredictably unfolding socially constructed landscape, fuelled by a reflexive attention to the decisions made by the ethnographer and a sceptical approach to claims made for any technology in its own right, offers a very powerful methodological stance for the contemporary Internet.

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