

A change of space:

Implications of digital fieldwork in connected homes during the COVID-19 pandemic

Corresponding author: Cristina Paupini, cristpa@oslomet.com, Department of Computer Science, Oslo Metropolitan University. Orcid: 0000-0003-4139-6331 Twitter: @CPaupini

Cristina Paupini is a graduate from the Roma Tre University of Rome with an MA in Education and a thesis on inclusive education. Her current research focus is on the risks related to the Internet of Things in the context of households, taking a universal design perspective. She is a PhD fellow at the Department of Computer Science at Oslo Metropolitan University, where she teaches ethics in the realm of technology use and design to bachelor's degree students and interdisciplinary innovation processes to master's degree students.

Co-author: Helene Fiane Teigen, helte@oslomet.no, Consumption Research Norway, Oslo Metropolitan University. Orcid: 0000-0002-5635-011X

Helene Fiane Teigen is a PhD fellow at the Institute for Consumption Research Norway at Oslo Metropolitan University. She holds two master's degrees in media studies from the University of Oslo and the University of Glasgow. Her research interests are digital technology and its place and impact on society and everyday life, including topics such as privacy, digital literacy, equality and gender.

Co-author: Laurence Habib, laurence@oslomet.no, Department of Computer Science, Oslo Metropolitan University. Orcid: 0000-0002-5955-9672

Laurence Habib is a professor at Oslo Metropolitan University in Norway and a Faculty Fellow at Fielding Graduate University. She holds a PhD in Information Systems from the London School of Economics, where her research focused on the domestication of technology in the home. Her past and current research spans a variety of areas, including domestic technologies, telecommuting, work-life balance, universal design of technology, educational technologies, and academic staff development.

Acknowledgments: The research this paper is based on is part of the RELINK – Relinking the "weak link". Building resilient digital households through interdisciplinary and multilevel exploration and intervention project. The research project is funded by the Research Council of Norway, IKTPplus, grant no. 288663, and is headed by Consumption Research Norway (SIFO) and Oslo Metropolitan University (OsloMet).

Declaration of interest statement: The authors have no competing interests to declare.

Abstract

Drawing on research conducted in ten Norwegian households, this article describes the effects that the COVID-19 pandemic and social distancing regulations have had on the research design and, consequently, on research data. The article describes how the research design had to be adapted to a variety of containment measures that were imposed during the fieldwork, and how this has influenced the researchers' rapport with informants and access to the field and the challenges that emerged. It also describes a more active role for the participants in the study, whose agency was enhanced. The article proposes a new way of approaching fieldwork in homes adopting "methodological improvisation" and concludes with recommendations for future research, proposing digital ethnography methods as both an option that enables data collection during a pandemic and as a sustainable alternative to certain methodologies that belong to traditional ethnography.

Keywords

Internet of Things; Digital fieldwork; Smart household; Qualitative methods; Digital ethnography

Introduction

Digital ethnography is not a new phenomenon that arose with the COVID-19 pandemic. In pre-pandemic times, the term was used either to refer to research in which data was digital and thereby had to be collected digitally, or to research that used digital methods to collect data in the analogue sphere (see for instance [1]). The restrictions imposed during the COVID-19 pandemic have sparked new interest into the practical and philosophical consequences of "translating" fieldwork that was planned to be physical into a digital format. Consequently, much research on digital ethnography during the COVID-19 pandemic seems to be permeated by a bias towards physical in-person interviews and being physically present in the field, describing digital ethnography as a back-up solution that is often suboptimal to ethnography carried out in situ [2]. At the same time, researchers warn that moving research online "risks reducing the complexity of social phenomena and the omission of important aspects of lived experience" [3]. Their argument is that online platforms and communication eclipse the immersion, context and trust-building process that takes place with informants [4].

However, when physical meetings are impossible or impractical, interviews carried out using video conferencing tools are generally viewed as the most viable alternative to in-person interviews [5, 6]. Online interviews may enable the recruitment of a wider range of participants, both when it comes to geographical location (as online interaction generally eliminates the need to travel) and the participants' availability. Interviewees and interviewers tend to be more available for online communication since digital methods allow, for example, interviews to be scheduled in the evening, which could have been impractical in person.

As many recent ethnographic studies on the connected home focus on being present in the field, and experiencing space, place and material infrastructure alongside the

informants [7, 8], this project's fieldwork had also aimed to explore the environment and its dynamics together with the participants when researching the various risks and vulnerabilities that owners and users of connected devices are faced with in the context of the household. We have explored more particularly how participants understood the vulnerabilities of the connected devices that they owned and used, and how this affected their own lives and the lives of other members of their household. However, when the COVID-19 pandemic hit and social distancing became the norm, home visits were no longer a viable option, and the researchers were forced to explore alternatives.

This paper contributes to the emerging pool of literature on methodological responses to the COVID-19 pandemic by exploring how digital research tools can contribute positively to ethnographic fieldwork on the smart household through applying the concept of methodological improvisation. In doing so, it provides insights into the use of digital tools in ethnographic research, not only under the extraordinary conditions created by the global pandemic, but also in situations where online fieldwork methods are chosen for practical purposes. We will focus on digital ethnography as a methodological strategy, and the use of digital technology for data collection, particularly for conducting fieldwork in the domestic sphere. We would argue that conducting digital ethnographical fieldwork by employing digital technology for collecting qualitative data is not just a viable alternative to in-person interviews when this is not available, but rather that it enables a different research process that can contribute to enriching the data collected.

Since it is evident how the coronavirus pandemic is impacting and changing ethnographic fieldwork as it was traditionally conceived, in the short and the long term [2], this research aims to contribute to such evolution by reflecting on how the relationship between researchers and informants has subsequently changed, particularly with regards to power dynamics, trust and the informants' agency.

Drawing on the fieldwork conducted in ten Norwegian households, this article considers the different effects of the COVID-19 pandemic and consequent national regulations on the research design and the relationships with the study participants.

The next section of the paper will discuss relevant literature on different positions regarding digital fieldwork and the most important tools employed in this methodology. The subsequent two sections will present the empirical data collected through the research project and the findings derived from it. The last two sections provide a discussion of the findings and concluding remarks.

Background on the literature

The Digital Ethnographic Fieldwork

Ethnography as a research practice does not have one standard definition, but rather varies across disciplines and in accordance with the research questions posed. It is used by scholars from a range of qualitative social science disciplines and in design [9]. O'Reilly summarises some commonalities of the various understandings of ethnographic fieldwork; "(...) ethnography is a practice that evolves in design as the study progresses; involves direct and sustained contact with human beings, in the context of their daily lives,

over a prolonged period of time; draws on a family of methods, usually including participant observation and conversations; respects the complexity of the social world; and therefore tells rich, sensitive and credible stories" [10]. Furthermore, Pink et al. argue that the *home* as a research site has certain characteristics that distinguish it from more conventional long-term ethnographic fieldwork sites. For instance, researchers often choose short-term methods to avoid being too intrusive, such as structuring the fieldwork as visits rather than living with a family over time. These short-term methods also include creating what Pink et al. refer to as "intensive encounters", by utilising videos or photography to replace the more traditional longer-term participatory observation [9].

O'Reilly, arguing that ethnography responds to changes in the world around us, states that ethnographies can now be "multi-sited, mobile, virtual, global (or a combination of these), perhaps paying special attention to, or merely including, visual and sensory aspects" ([10] p. 159). As Pink et al. also note, new technological and theoretical shifts have also shaped ethnographic research across disciplines, leading to a number of approaches that focus on visual and digital aspects [11]. For example, Pink and Leder Mackley used video tours and video re-enactments to research mundane everyday life in homes [12, 13]. Storm-Mathisen and Helle-Valle combined several methods, among them participant video tasks and video walk-along interviews, to explore the use of ICT among children both at school and at home [14]. Nansen et al. utilised a digital app to gain insight into the consumption of broadband internet and digital media in everyday domestic spaces [15]. The app allowed participants to access tasks set by the researchers and to capture text, image, video and sound. Mainsah and Prøitz explored social and mobile media, both as research tools and as the site of study [16].

Video interviewing as a research method

Although methods such as photography and video are employed in ethnographic research, conducting online video interviews remains a contested practice. In-person interviews are generally considered the golden standard of qualitative research [17]. According to Góralaska, the main limitations from a researcher's point of view are the loss of information that would normally be conveyed through body language, nonverbal communication and restricted access to the participants' environment [2]. In-person interviews represent a natural connection point where the interviewer can build a rapport with the participants while observing their body language and how they behave within their environment [5]. Digital tools can as such create a distance between the interviewer and interviewee that could limit the type of topics that are brought up and the depth of the discussion. The discussion of some topics of a more sensitive nature may also require a more intimate setting [5]. Furthermore, Adams-Hutcheson and Longhurst suggest that an in-person interview often involves stabilising patterns and rhythms that help people to feel more comfortable [18]. These patterns are created by everyday activities performed at home, at a café or at the office – wherever the interview takes place. This could include settling a baby, interacting with a pet or ordering and talking over a meal or a cup of coffee. Adams-Hutcheson and Longhurst argue that people feel less comfortable when it comes to how to "perform" on Skype than in person, and when using video interviews via,

for instance, Zoom or Skype, they do not have as many opportunities to use their bodily senses to ease the interaction [18]. Some participants might also find the digital tools difficult to interact with, especially if they do not have the necessary technical competences [19]. The unequal distribution of digital skills in a population, and the cost involved in acquiring digital equipment and securing good network conditions, may thus cause underrepresentation of some participant groups when fieldwork is carried out digitally. Additionally, inadequate equipment or a poor internet connection on the part of either the researcher or the informant can affect the quality of the data collection (Irani, 2019). Finally, the physical distance involved in digital interviews restricts the researcher's access to the environment the informant is in, and, consequently, to the contextual data that it provides during the analytical phase [5].

As technology has evolved, however, video interviews have received increasing attention as a potential alternative to in-person interviews. As a tool, video interviewing allows for real-time conversations and more closely resembles in-person interviews when compared to other digital methods such as e-mail interviews and instant messaging [5].

Recent studies have demonstrated how digital interviews, especially using tools such as Zoom or Skype, can represent a positive experience for the participants involved [17]. Some of the positive aspects of this methodology include the convenience and ease of use for the informants, the enhanced personal interface to discuss personal topics, and accessibility [19]. Archibald et al. also studied the use of video conferencing platforms specifically for collecting qualitative data, by interviewing a small sample of researchers and participants on Zoom [20]. Their results showed that the participants were satisfied with the video conferencing platform, and rated it above other interview mediums, such as phone and face-to-face interviews [20]. Additionally, video conferencing software represents an opportunity for researchers in relation to the logistical convenience of having fewer geographical constraints, reduced expenses associated with travelling for in-person interviews and greater flexibility when it comes to work schedules [5]. In the context of the COVID-19 pandemic, Góralaska further adds that the method allows researchers to go ahead with fieldwork that they and the participants have already invested time and energy in, and that it allows researchers to incorporate the pandemic situation into their studies [2].

Qualitative research during the COVID-19 pandemic

A number of recent publications explore the same transition of moving from physical to digital contexts as a response to the pandemic situation, and the implications of this transition, as these were topics that concerned a large population of researchers globally. For instance, Lawrence, and Moran and Caetano discuss the use of videoconferencing platforms such as Skype and Zoom for conducting qualitative interviews, and Watson and Lupton explore remote fieldwork in homes [4, 21, 22]. Howlett, and Podjed reflect on what is described as the return to armchair anthropology, and Mwambari et al. discuss distance methods [3, 23]. Furthermore, a series of webinars were posted on YouTube by the Stanford University Centre for Global Ethnography where panellists explored a range of methods and techniques for remote ethnographic research in the humanities and social

sciences (see [24]). The National Centre for Research Methods (NCRM) in the UK also posted videos on YouTube about adapting methods to the COVID situation, with topics ranging from surveys and secondary data, to ethnographic and creative methods (see [25] and [26]). A crowdsourcing initiative on doing fieldwork in a pandemic was also collected and organized into a Google document edited by Lupton [27].

The effect of the ongoing global COVID-19 pandemic has been profound for researchers, particularly those working within an ethnographical or anthropological framework, forcing them to explore different options for data collection.

If it is true that “the basic tool of anthropology is field research based on participant observation *in situ* and in close contact with people” [28], then it is also true that different methods can be found in order to perform that observation. In fact, several scholars have suggested that digital ethnography can actually provide valuable means of interacting with participants and collecting their experiences, while mitigating at least some of the effects of the pandemic [29]. During this period of crisis and isolation caused by social distancing regulations around the globe, people have employed digital devices and software to preserve some level of intimacy and sociality with family and friends. This has thereby increased research participants’ general level of familiarity with this technology.

In their research, Watson, Lupton and Michael argue that since digital communication tools are able to generate feelings of connection and co-presence in the users, it might be worth considering the digital materialities of such connections [30]. For their participants, the new media practices online were described as “a contingent supplement born of necessity different from and less ‘real’ or ‘human’ than proximate relationships, but nevertheless of central significance and meaningful in the crisis context” (p. 148). Video methodologies, in fact, represent a valid alternative to similar methodologies performed during *in situ* fieldwork, such as reenactment and house tour, and can empower the participants to take control of the narration and the researcher’s perspective, remove the requirement for geographical co-presence and potentially shift power and ownership towards local co-researchers and participants [31].

On the need for “methodological improvisation”

Technology has played an increasing role in ethnographic fieldwork, both by enhancing contemporary approaches that were already established and by enabling alternative methods of observation. Looking beyond the times of crisis, the habitus of academic inquiry, where one of the fundamental assumptions is the process of scientific research requires careful planning and a careful implementation of the plan that has been drawn and approved by the relevant authorities, has now been challenged. If on one hand technology can actually expand the field of anthropology by exploring global structure and cultural and social practices that were not previously accessible [28], a deeper shift in the academic and scientific research system is needed. Scholars are warming to the idea of establishing hybrid research approaches in practice going forward, adopting flexible approaches that enable swift responses to the everchanging conditions.

It is to be noted that the assumption of research as a planned endeavour has been challenged both before and during pandemic times, and several authors have underlined the need flexible approaches to research methodology. Markham advocates for a "remix approach to methods" [32]. Similarly, the term "methodological bricolage" has been suggested by both Bueddefeld et al. [33] and Pratt et al. [34]. Duque et al. use yet another term, "methodological troubleshooting", to refer to the same concept [35]. In this paper, we suggest borrowing a concept from the field of music performance and use the term "methodological improvisation", which we believe encapsulates both the fundamental necessity of being flexible and adaptable to one's environment while performing research and the need to embrace a certain level of risk-taking when embarking in any research endeavour.

This flexible methodological approach reflects Pink et al.'s conception of a digital ethnography as an approach characterised by multiple and ever-changing facets [36]. This conception of digital ethnography considers how the digital is situated within the uneven and sometimes unstable rhythms of everyday life. It thus requires methodological approaches that are fluid, flexible and, more importantly, reflexive.

It also echoes Hine's emphasis on adaptive ethnography [37], in which she argues for an understanding of digital ethnographic fieldwork as a messy process that crosses online and offline worlds, and that is connected and constituted through the ethnographer's narrative.

The notion of improvisation is also consistent with how some researchers envision digital research as a practice that requires a nimble ethnographic sensibility [38-40]. Insights from those studies indicate that a methodological awareness of the messiness of fieldwork would enable researchers to approach swiftly changing social contexts with suppleness and to adapt to them in a pragmatic manner.

Empirical data

In this article, we present the planned methods for data collection in a research project on smart Norwegian households and how the methods were modified as the result of lockdowns in Norway during the pandemic period in 2020–2021. We also describe our experience of evaluating, selecting and implementing data collection methods that, at the time, seemed unconventional.

The original plan

The project this research is part of aims to explore the relation IoT users have with their domestic devices, focusing on the routines built around them and the perception of privacy and privacy-related risk in the context of a smart household. For the purpose of this study, a smart household has been defined as a household containing at least one smart speaker, such as Google home or Alexa, or three different domestic IoT devices. This has also been the main criteria for the recruitment of participants, together with fluency in conversational English.

Our research questions included understanding the users' beliefs and boundaries around privacy as well as their feelings towards the IoT devices in their homes and their insight on the type of personal data that was being collected and shared. We also aimed to identify their practices and routines surrounding the devices, the domestic workload that they brought and how that weighted on the dynamics of the household.

The original design of the research entailed two of the three authors visiting households in person to experience the space alongside the informants and better understand the dynamics surrounding their IoT devices. We had planned two visits to each participating household, and selected activities for the purpose of observing the participants in their home as they engaged with their material infrastructures. The idea was to ask questions and keep the conversation going while moving around in the space or performing these activities. This would thus differ from a typical interview situation. Our intention in making this choice was to create a more natural and relaxed atmosphere for the interview, while at the same time using the material infrastructure of the home actively to bring up conversation topics.

In addition to a semi-structured interview, the first household visits were to include a session where the participants would be asked to draw a floor plan of their home, indicating where the devices were, and a second session where they would give us a tour of their home and show us the devices. In addition to seeking the participants' reflections and stories through interviews, we wanted to utilise the map and the tour to capture data on the participants' awareness of the devices, as well as where they were placed in the home and how they were incorporated into the household. This included, for instance, whether the digital devices were concealed under a pile of clothing or placed visibly on a kitchen counter. The second household visits were also to include a semi-structured interview as well as a re-enactment of daily routines involving the IoT devices. The aim of the re-enactment was to collect data on how the smart devices featured in the participants' everyday lives, including mundane, taken-for-granted actions such as turning on a smart light. We would ask them to act out what their regular day looked like, including all routines, but to be more tuned in to those involving technology in our follow-up questions. At the end of the second visit, we planned to give the participants a "homework assignment" to be sent to us by email together with an updated list of IoT devices currently being used in their home.

We had just started our recruitment process and performed our first set of interviews (two home visits for the first pilot) when the pandemic struck. The day after our second home visit, Oslo went into an abrupt and complete lockdown, thereby making home visits an impossibility. We conducted the second pilot interview via Skype, since it had already been scheduled, and thereafter decided to postpone the fieldwork until further notice, aiming to reevaluate the situation in May.

When May 2020 arrived, the situation remained much unchanged – Norway remained in lockdown and there was no indication that the situation would improve substantially within the next few months. We therefore decided to restructure our fieldwork and carry

it out using entirely digital methods. We started the recruitment through social media channels and mailing lists, managing to reach mostly young people with an already strong interest for technology. We conducted the first round of interviews at the beginning of June. In the autumn of the same year, we decided to conduct a second round of interviews focusing on older users above 70 years of age to enrich the data with different experiences and perspectives on the use of IoT devices and the risks for privacy that might come from them. We felt it was an important integration to our pool of data due to the different levels of competences and interest that different demographics have towards technology and that might result in higher levels of exposure to privacy risks.

The new/adapted/redesigned plan

We decided to maintain the overall structure of the research design to the degree possible: we organised two house “visits” in the form of video calls using zoom or skype depending on our participants’ preferences. We deliberately decided not to pressure the informants into turning on the cameras, but most of them chose to do so nonetheless.

During the first visit, we asked our participants to draw a floor plan of their house and indicate where the different IoT devices were located, as in the original plan. This time, however, it was more difficult for us to follow the process: although some of the participants decided to use digital devices to complete the drawing and managed to share their screen with us, many participants decided to use a pen or pencil on paper, and it was hard for them to find a camera angle that would allow us to follow the process. We also chose to go ahead with the house tour and the semi-structured interview. However, the informants were asked to show us around using a webcam for the guided video tour of their home, and there were situations in which this did not prove possible. For instance, it emerged that one of the participants was talking to us from his work office. This was one of the first interviews we conducted, and we were still adapting to the new format, so we had not specifically requested that the informant should be at home. As it turned out, it was more practical for the participant to take the call from the office after work hours due to a long commute, so it was not until we asked him for a tour of the house that we realised it was not possible. We ended up including the tour in the schedule for the second visit in this case.

In the second visit, we attempted to maintain the re-enactment of daily routines involving the IoT devices according to the original plan. We asked the participants to walk around the house and show us, step by step, what they would do during a regular day. However, we learned after the first couple of interviews that the informants were substantially more comfortable with narrating the routines than with physically walking around the house with a mobile device in their hand. The re-enactment was then incorporated into the second semi-structured interview, and we asked the informants to recount their routines and supported their narration with relevant questions. At the end of the second visit, we assigned our informants “homework” to be completed over the next few weeks and to be sent to us by email. Also in this case, as in the original plan, the homework consisted mainly of recording themselves, or just their hands, while using one of their IoT devices.

Findings

As researchers, having to redesign the fieldwork meant having to compromise our vision and the plan we had in mind for the data collection. The data collection process was scheduled to start almost exactly when the COVID-19 pandemic led to the first round of lockdowns, and we thereby attempted to redesign our fieldwork to adapt to a volatile situation that had no end in sight.

Access and rapport with the informants

When we redesigned our fieldwork, we expected to encounter difficulties establishing contact with potential participants, especially since we were interested in interacting with vulnerable populations such as elderly people. Access to communal homes and recreational centres was obviously precluded for health and safety reasons, and all in-person recruitment was absolutely discouraged. We were therefore unsure of the demographics we would have managed to reach.

The second challenge we had anticipated was related to whether or not we would manage to establish a satisfactory rapport with the participants. In-person interviews are often considered the golden standard for qualitative data collection because of how simply sharing a physical space with the participant can ease the conversation and facilitate a personal connection. We were concerned that not being there in the participants' home, and thereby sharing physical space, might result in a lack of enthusiasm, connection, and involvement.

Our experience turned out to be rather different from what we had expected, however. We ended up recruiting participants through Facebook groups and the University's mailing lists instead of through official channels such as recruitment agencies, and the informality of such media made most of the connections friendly from the offset. All the participants were highly engaged during the interviews, and were extremely helpful, for example in connection with suggesting more participants. Almost every informant that we recruited ended up recruiting at least one more person on our behalf. In some cases, it was the informant's spouse who had overheard the interview and was also interested in participating. In other cases, it was multiple friends from different geographical areas of Norway.

We were also surprised to find that the pandemic and consequent lockdowns functioned as a useful icebreaker in starting a dialogue with the participants. We experienced that the simple reality of sharing such a life-altering, global experience brought us closer together in some way. We ended up collecting countless anecdotes on the lives of the people we spoke to, and we shared jokes and existential reflections on the future, in addition to collecting the data that was needed for the research. As a result, the audio files from the interviews were longer than expected, and the breadth of the topics discussed during the interviews was greater than anticipated. However, we believe that this "corona-induced small talk" added both richness and texture to our empirical material.

Challenges

One of the issues we had not anticipated, however, was that the researchers would experience difficulties interacting with each other while conducting the digital house visits. The first house visit was conducted in-home and in-person just before the first lockdown was implemented, and for the subsequent twelve interviews, the researchers were allowed to work from the same office. In such situations, the researchers were able to read each other's body language and be more synchronised in the moment. In our experience, there is something extremely valuable in managing to "tune in" with co-researchers during fieldwork. Due to changes in the lockdown regulations in Oslo, however, the rest of the fieldwork had to be conducted by the two researchers from separate rooms. This resulted in unexpected new difficulties. Not being in the same room meant that reading each other's body language was more difficult than before, and being unable to read non-verbal clues from each other, we experienced several instances where we either interrupted each other or fell into awkward silences. We ended up using such episodes as additional "ice breakers" and tension-releasing moments while simultaneously working to find alternative channels of connection.

Discussion

Although the digital fieldwork proved to be a valid solution in the face of emergency for our research, it is not a "one size fits all" solution, and fieldwork designed for an in-person context does not necessarily translate perfectly to a digital format. Methods must be deliberately adjusted to the different conditions the study will encounter and expectations must be redefined. Researchers should also be prepared for methodological improvisation as glitches and the need for adjustments are likely to emerge during fieldwork. We found that redesigning our methods impacted the types of data we gained access to, which in turn may affect how the research questions in this ongoing study are answered. It also made us aware of what we gained and lost by not being physically present in the same space as the participants.

Access to the field

In a physical context, for example, interviews and home tours are often blurred into each other [11], as domestic spaces and materials offer useful framing for the conversation taking place at that moment and in that space. In our case, the different moments of the house visits were somewhat rigidly defined due to the different setting, and it was difficult to keep the conversation going while moving around the house due to the webcam facing away from the informant and the audio picking up the noises from their movements. It is also worth reflecting on the possibility that it would have been more natural for the participants to demonstrate their use of the IoT devices in a practical way with the researchers present, although most of them chose to do so nonetheless in digital form. Even through the limited lens of a webcam, we managed to observe our informants move within their environment, often while they talked about their daily life as it would usually unfold. At times, the verbal accounts and movement had to be separated, but the perception of place and practices was preserved.

An interesting aspect on the relation between the domestic digital devices and our informants, is that we had the opportunity of conducting the interviews in a historical moment in which our participants were forced to interact with the digital devices at a higher rate compared to the usual. During the lockdowns, most Norwegians were encouraged to work from home and limit in-person social interaction to close family members. As a consequence, the majority of social interaction became mediated by the digital devices in their lives as they spent more and more time within the domestic environment. This particular condition allowed them to reflect on the experience with the devices, especially in regard to glitches, malfunctions or the feeling of “being surveilled” by the smart speaker(s) in the house, which were more noticeable thanks to the continued use.

According to Kusenbach, *being there, in situ*, during a go-along interview has the potential to access certain transcendent and reflexive aspects of lived experience, exposing complex and subtle meanings of place in everyday experience and practices [41]. Although in her example Kusenbach refers to interviewing as she walks with participants in places that mean something to them (e.g., a neighbourhood), we would argue that such experience is not radically different from ours. In fact, we were brought along by our informants on a tour of their homes, the main difference being that our vision, and our perspective, was directed towards what they chose to show us. The core of the methodology remained the same: the participants bringing the researchers along in a place that is meaningful to them (their home), sharing their reflections and thoughts as they did so. However, one aspect of the walk-along that we could not achieve through digital means was the sensory experience of being physically present in the same space as the informants. The limitation of access through the screen was also evident in our fieldnotes. While the fieldnotes from our first two physical home visits contained more sensory information about the atmosphere of the participants’ home, such as temperature and smell, later notes from the digital interviews were more oriented towards the verbal and the visual. This includes, for instance, topics of interest that emerged during the conversations and the video tour, as well as notes on technological challenges. On the other hand, what we instead gained was the participants’ own narrative, both visually and verbally. Pink writes that such narratives can be understood as a vehicle for self-representation that both reveals and conceals [7]. This was clear when reflecting on the participants’ autonomy.

Finally, different research studies conducted in the first months of the pandemic seem to agree on how such digital methods of data collection, especially when qualitative, represent an opportunity for the inclusion of people living in remote locations [29, 42], and that was another positive aspect of our experience. Digital data collection allowed the researchers and the participants to meet each other across wider geographical areas than would have been practicable in person and also across a wider time span that would normally be considered acceptable, given the general norms of when home visits should be carried out in households. It may be argued that having a digital presence in the household “after hours” might feel less intrusive than if researchers were present in the

home physically, but this is likely to be highly dependent on the household's routines and preferences.

Challenges of the method

Although the digital home tour still worked, the re-enactments of everyday routines were not as successful. As already mentioned above, participants were more comfortable with narrating their everyday routines than acting them out. Moreover, we were not able to observe them move about in the same way as if we had been physically present. The participants used one hand to hold the camera, via their phone or tablet, and the angle and framing of the image presented to the researchers was thereby limited. However, we cannot be certain that the participants would have been more comfortable acting out their routines in front of us without the camera. Additionally, according to Hitchings, people can also reveal the often-unreflected mundane activities through conversation if they are appropriately probed [43]. We therefore aimed to be detailed and specific when asking follow-up questions to the everyday routine recounts.

It must also be noted that one of the risks of conducting interviews digitally resides in the inherent unreliability of digital devices, exacerbated by the existence of varying digital skills among the informants. Although we have not experienced such situations ourselves, we are aware of the risk that informants could turn on the camera by mistake, or that the camera could "turn itself on" without them being aware of it. Should this happen, a digital interview might leave the respondents more exposed than if the interviewers had been present physically.

Rapport with the informants

An unexpected consequence worth discussing is how conducting the interviews in the early months of COVID lockdown favoured the creation of what Watson and Lupton define as a "mutual window of feeling" [22]. Researchers and participants were both immersed in a new and scary daily reality, working from home and managing life and relations with the loved ones through digital platforms [22]. In our experience, this condition encouraged a feeling of mutual trust and closeness with the informants, which might have been difficult to achieve under different circumstances. As a result, the interactions were informal and humorous from the start, with all the participants that were eager to share their experiences with the researchers in a meaningful way.

The difference in the level of autonomy in terms of what the researcher's eyes could see is probably the biggest difference we experienced between being physically in the field and only being present through the lens of a digital device. The person holding the device can exert a certain amount of control over what is shown to the researcher. They can decide to not turn on the camera at all (as was the case for two of the interviews), thereby cutting off all visual output during the interview. They can also control what to show us, from which angle and at which point. For example, one of the participants chose not to show us their bathroom when passing by, saying that they felt "ashamed of the mess". At the same time, the researchers are also sharing a glimpse into their live homes through that very same digital "window" [22]. Navigating the change in this power dynamics is a

clear point of interest as it forced us to reflect on aspects of the relationship between researcher and participant that we had until that point overlooked.

Within qualitative research traditions, gaining an informant's trust is a notion that has been widely explored [44, 45], especially as regards vulnerable populations or particularly private environments such as the home. In our case, we could argue that the dynamics were reverted: the researchers had no alternative but to trust that what the participants were sharing, either as a narration or video tour, was truthful and honest. It is true that a certain degree of trust, here meaning the action of deferring to the informants with comfort and confidence concerning things beyond our knowledge or power [46], is also an integral part of in-person fieldwork. It is impossible to know whether the participants' homes normally look as they did during the interviews, or whether they had just spent an entire afternoon cleaning and preparing for the researcher's arrival. Nor is it possible to know whether the anecdote being recalled in the moment actually happened in that exact way. The difference is that in digital fieldwork, such dynamics are overt – there is no way to take a “sneak peek” at the informant's life or to ask improvised questions based on what has been seen (by the interviewer) but not shown (by the interviewee).

Conclusions

In this article, we have described the reasons for changing our data collection approach from in-person home visits to digital interviews, which was entirely connected to the insecurities of conducting fieldwork during a pandemic. We have also described how this change has affected how we communicated with the informants and with each other, and what kind of data could be gathered. Our experience indicates that digital interviews may empower the participants to a greater degree than on-site interviews in the home. We have described how this methodological approach can offer more flexibility and inclusivity than traditional home visits, which some participants could consider disruptive, for example due to the private nature of both domestic spaces and domestic time. We have also described how our work as researchers was rendered more difficult when we were not in the same room, thereby reducing the possibility of reading each other's body language.

Based on our experience, our recommendations to researchers planning to carry out ethnographies of the home during periods of uncertainties such as pandemics would be to include a degree of flexibility in the very design of the data collection, which would be more akin to improvisation, as a method, than to trouble-shooting. Such an approach would empower researchers with the ability to make swift changes should the original plan become unfeasible.

By way of conclusion, we would like to emphasise the need to gather more insights into epistemological, ethical and practical issues related to digital ethnography, not only as an alternative methodology during pandemics, but also as a more sustainable option for conducting ethnographies, especially ethnographies of the home, in the future. By sustainability, we mean not only a reduced need for transportation, but also, and perhaps even more importantly, increased access to participants who would not otherwise be

given a voice, for example due to geographical distance or cultural differences that may limit the possibility of home visits by researchers.

References

1. Pink, S., *Digital futures anthropology*, in *Digital Anthropology*. 2021, Routledge. p. 307-324.
2. Góralaska, M., *Anthropology from home: Advice on digital ethnography for the pandemic times*. *Anthropology in Action*, 2020. **27**(1): p. 46-52.
3. Mwambari, D., A. Purdeková, and A.N. Bisoka, *Covid-19 and research in conflict-affected contexts: distanced methods and the digitalisation of suffering*. *Qualitative Research*, 2021: p. 1468794121999014.
4. Lawrence, L., *Conducting cross-cultural qualitative interviews with mainland Chinese participants during COVID: Lessons from the field*. *Qualitative Research*, 2020: p. 1468794120974157.
5. Irani, E., *The use of videoconferencing for qualitative interviewing: opportunities, challenges, and considerations*. 2019, SAGE Publications Sage CA: Los Angeles, CA.
6. Krouwel, M., K. Jolly, and S. Greenfield, *Comparing Skype (video calling) and in-person qualitative interview modes in a study of people with irritable bowel syndrome—an exploratory comparative analysis*. *BMC medical research methodology*, 2019. **19**(1): p. 1-9.
7. Pink, S., *Performance, self-representation and narrative: Interviewing with video*, in *Seeing is believing? Approaches to visual research*. 2004, Emerald Group Publishing Limited.
8. Pink, S., *An urban tour: The sensory sociality of ethnographic place-making*. *Ethnography*, 2008. **9**(2): p. 175-196.
9. Pink, S., et al., *Mundane data: The routines, contingencies and accomplishments of digital living*. *Big Data & Society*, 2017. **4**(1): p. 2053951717700924.
10. O'Reilly, K., *Ethnographic methods*. 2012: Routledge.
11. Pink, S., et al., *Making homes: Ethnography and design*. 2017: Routledge.
12. Pink, S. and K. Leder Mackley, *Saturated and situated: Expanding the meaning of media in the routines of everyday life*. *Media, Culture & Society*, 2013. **35**(6): p. 677-691.
13. Pink, S. and K. Leder Mackley, *Re-enactment methodologies for everyday life research: Art therapy insights for video ethnography*. *Visual Studies*, 2014. **29**(2): p. 146-154.
14. Storm-Mathisen, A. and J. Helle-Valle, *IKT-bruk i skolen og familien-en praksisteoretisk studie av kjønn*. *Tidsskrift for kjønnsforskning*, 2014. **38**(2): p. 149-167.
15. Nansen, B., et al., *Digital ethnographic techniques in domestic spaces: Notes on methods and ethics*. *Visual Methodologies*, 2015. **3**(2): p. 86-97.
16. Mainsah, H. and L. Prøitz, *Notes on technology devices in research: Negotiating field boundaries and relationships*. *Qualitative Inquiry*, 2019. **25**(3): p. 271-277.
17. Moises Jr, C., *Online data collection as adaptation in conducting quantitative and qualitative research during the COVID-19 pandemic*. *European Journal of Education Studies*, 2020. **7**(11).
18. Adams-Hutcheson, G. and R. Longhurst, *'At least in person there would have been a cup of tea': interviewing via Skype*. *Area*, 2017. **49**(2): p. 148-155.
19. Gray, L.M., et al., *Expanding qualitative research interviewing strategies: Zoom video communications*. *The Qualitative Report*, 2020. **25**(5): p. 1292-1301.
20. Archibald, M.M., et al., *Using zoom videoconferencing for qualitative data collection: perceptions and experiences of researchers and participants*. *International Journal of Qualitative Methods*, 2019. **18**: p. 1609406919874596.

21. Moran, L. and A. Caetano, *Biographical research through the looking glass of social distancing: Reflections on biographical interviewing and online technologies in pandemic times*. Irish Journal of Sociology, 2022. **30**(2): p. 209-213.
22. Watson, A. and D. Lupton, *Remote fieldwork in homes during the COVID-19 pandemic: Video-call ethnography and map drawing methods*. International Journal of Qualitative Methods, 2022. **21**: p. 16094069221078376.
23. Howlett, M., *Looking at the 'field' through a Zoom lens: Methodological reflections on conducting online research during a global pandemic*. Qualitative Research, 2021: p. 1468794120985691.
24. Centre for Global Ethnography [YouTube channel] (2020, J., *Doing Ethnography Remotely: Question-and-Answer Webinar (June 5th, 2020)*. 2020, https://www.youtube.com/watch?v=XRn_eUQFhLQ&t=1418s.
25. Kara, H. and S. Khoo, *Researching in the Age of COVID-19 Volume 3: Creativity and Ethics Conclusion*. Researching in the Age of Covid-19, Vol 3: Creativity and Ethics, 2020: p. 120-124.
26. Meckin, R., M. Nind, and A. Coverdale, *The NCRM wayfinder guide to creative methods combinations in Covid-19*. 2021.
27. Lupton, D., *Doing fieldwork in a pandemic*. Crowd-sourced document, 2020.
28. Podjed, D., *Renewal of Ethnography in the Time of the COVID-19 Crisis*. Sociologija i prostor/Sociology & Space, 2021. **59**(1).
29. Hall, J., M. Gaved, and J. Sargent, *Participatory research approaches in times of Covid-19: A narrative literature review*. International Journal of Qualitative Methods, 2021. **20**: p. 16094069211010087.
30. Watson, A., D. Lupton, and M. Michael, *Enacting intimacy and sociality at a distance in the COVID-19 crisis: the sociomaterialities of home-based communication technologies*. Media International Australia, 2021. **178**(1): p. 136-150.
31. Marzi, S., *Participatory video from a distance: co-producing knowledge during the COVID-19 pandemic using smartphones*. Qualitative Research, 2021: p. 14687941211038171.
32. Markham, A.N., *Remix as a literacy for future anthropology practice, in Anthropologies and futures*. 2020, Routledge. p. 225-241.
33. Bueddefeld, J., et al., *Methodological bricolage and COVID-19: An illustration from innovative, novel, and adaptive environmental behavior change research*. Journal of Mixed Methods Research, 2021. **15**(3): p. 437-461.
34. Pratt, M.G., S. Sonenshein, and M.S. Feldman, *Moving beyond templates: A bricolage approach to conducting trustworthy qualitative research*. Organizational Research Methods, 2022. **25**(2): p. 211-238.
35. Duque, M., et al., *Troubleshooting as a method in COVID-19 times: smart home ethnographies and remote aged care innovation*. Digital Creativity, 2022: p. 1-16.
36. Pink, S., et al., *Digital ethnography: Principles and practice*. 2015: sage.
37. Hine, C., *Ethnography for the internet: Embedded, embodied and everyday*. 2020: Routledge.
38. Barbosa, S. and S. Milan, *Do not harm in private chat apps: Ethical issues for research on and with WhatsApp*. Westminster Papers in Communication and Culture, 2019. **14**(1).
39. Caliendo, A., *Ethnography in digital spaces: Ethnography of virtual worlds, netnography, & digital ethnography*, in *Handbook of anthropology in business*. 2016, Routledge. p. 658-679.

40. Zayed, H., *Researching Digital Sociality: Using WhatsApp to Study Educational Change*. Journal of Digital Social Research, 2021. **3**(2): p. 44–69–44–69.
41. Kusenbach, M., *Street phenomenology: The go-along as ethnographic research tool*. Ethnography, 2003. **4**(3): p. 455-485.
42. Rahman, S.A., et al., *Resilient research in the field: Insights and lessons from adapting qualitative research projects during the COVID-19 pandemic*. International Journal of Qualitative Methods, 2021. **20**: p. 16094069211016106.
43. Hitchings, R., *People can talk about their practices*. Area, 2012. **44**(1): p. 61-67.
44. Huslage, M., A. Rai, and M.L. Held, *Building Partnerships and Trust: Research With Vulnerable Immigrant Communities*. Families in Society, 2021: p. 10443894211034776.
45. Emmel, N., et al., *Accessing socially excluded people—Trust and the gatekeeper in the researcher-participant relationship*. Sociological Research Online, 2007. **12**(2): p. 43-55.
46. Whyte, K.P. and R.P. Crease, *Trust, expertise, and the philosophy of science*. Synthese, 2010. **177**(3): p. 411-425.