Digital anthropology

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'The digital' is defined here as new technologies that are ultimately reducible to binary code. These have made many cultural artefacts easier and quicker to both reproduce and to share. The first section of this entry is concerned with populations and worlds that are largely the result of digital technologies. The second section examines the more general use and consequences of digital technologies on diverse populations around the world. Rather than separating off the impact of digital technologies, a major contribution of anthropology has been through holistic ethnography, which demonstrates that we can only understand new digital worlds in the context of wider social relations and practices. Rather than trying to adjudicate digital technologies as positive or negative, anthropology may also focus upon their inherent contradictions. A third section examines the way digital technologies impact anthropological methodology. In the final section the concern is with the impact digital anthropology may have on our conception of anthropology itself and what it means to be human.

Introduction

On almost any day one can find newspaper articles which tell us we have lost our humanity to smartphone or selfie addiction, or why we should be anxious about how artificial intelligence will replace our labour, or how algorithms reduce our selves to mere data. Sometimes there is a counter-narrative that new technologies can solve all health problems or prevent the catastrophic consequences of climate change. In short, akin with political anthropology, digital anthropology is an arena within which developments are constantly used to make larger normative and ethical arguments rather than merely observe and account for the consequences of technological change.

Anthropology as a discipline began with the study of small-scale societies, regarded as traditional or customary and often wrongly assumed to change slowly, if at all. By contrast, most people regarded the advent of digital technologies as a kind of speeding up of the world, a rather breathless and unrelenting deluge of the new. So an anthropology that is tasked with encompassing and understanding the digital world is perhaps also the final repudiation of that initial illusion that there have ever been societies outside of trajectories of change. It may grant us a more balanced or rounded discipline that is equally concerned with the entire gamut of human experience.

At the same time, rather than being merely a tool in debates over whether digital technologies have good or bad consequences, anthropology has retained its holistic methodology. It is therefore the discipline most likely to situate new technologies within a much wider cultural and social context and thereby appreciate

the inherent contradictions and complexities that emerge from the larger study of their use and consequence. Ethnography will show how digital technologies produce both new possibilities for political activism and also for state oppression, creating conditions for the commodification of music and other media and the de-commodification of those same media simultaneously.

The term 'digital anthropology' can be used to refer to the consequences of the rise of digital technologies for particular populations, the use of these technologies within anthropological methodology, or the study of specific digital technologies. But the topic may also raise wider questions about the nature of contemporary anthropology itself, both what it now means to be human and how anthropology as a discipline should incorporate worlds that were neither precedented nor possible in the past. This essay will begin with the question of what we mean by 'the digital'. It then divides the consequences of these technologies into three parts. The first consists of the study of the technologies themselves, via the populations specifically associated with them such as hackers. The discussion then moves to the more general assessment of increasingly ubiquitous digital technologies such as social media upon ordinary populations through traditional ethnographic fieldwork. A third section examines the uses of digital technologies for anthropological methodology. The final section will turn to the larger questions of the implications for the nature of anthropology and humanity.

What is 'the digital'?

No attempt to define 'the digital' should go unchallenged. The definition that will be used for the purposes of this essay will be everything that can be reduced to the outcome of binary coding (Miller & Horst 2012).

There are several alternatives. Some might focus more on the rise of cybernetic systems,[1] while others concentrate upon a separate online world termed 'virtual' (e.g. Boellstorff, Nardi, Pearce & Taylor 2012). The reason for choosing a definition based upon binary coding for this entry partly lies in its simplicity. It also has the virtue of highlighting certain key implications. These are firstly that digital technologies made it easier to create products that are completely identical and can therefore be easily reproduced. Secondly, that digital forms are much easier to share. These two properties in turn account for what appears to be a rapid and constant proliferation of new technologies and subsequent products, some of which become ubiquitous and scale up to reach most of the world population in a very short time. So, almost every year the focus of both popular and academic attention is on something different – the internet, search engines, the virtual, social media, big data, artificial intelligence, Tinder, the internet of things, and so forth.

One approach to digital anthropology developed out of material culture studies, which focused as much upon how things make people as with how people make things. We understand who we are in the mirror of a material world within which we are born and socialised. But this world was never static. One way in which culture itself became more diverse and expansive was through the explosion of material products we

associate with consumer culture. This has now been extended by the further dynamism and diversity found in digital forms. It is therefore important to remember that while the digital world may often be online, it is not immaterial. There is a material side to the world of 'bits' (Blanchette 2011), computers, memes, platforms, digital [photography], or digital [money].

So, the digital is not an abstraction but rather the creation of a plethora of quite concrete forms and processes. Furthermore, these are always encountered in the context of their use and consequences for some particular population, which means they become subject to cultural differentiation. The studies of social media referenced below reveal how the Chinese internet, where free instant messaging services such as QQ and WeChat focus upon avatars and hierarchies of users, is not the same as a Brazilian internet, with its emphasis upon political memes and gender relations. In one region we find an internet that constantly debates which digital forms are compatible with [Islam], in another the concern will be on how the internet can be employed in mobilising feminist protests such as #MeToo, or how to prevent it from turning people into data which could be harvested. The development of coding allowed for new forms of [sharing], not just of products, but also through what is termed 'Open Source'; that is, the collaborative development of code itself. This has, in some regions, become a model for new political ideals (Kelty 2008). In Italy, the [populist] Five Star Movement, which advocates direct democracy through the internet, became in the 2018 election the largest political party in Italy. In turn, digital tools lead to new forms of [surveillance] and control that were previously unimaginable. Seen from an anthropological perspective, it is the diversity and contradictions of the internet that become prominent.

Digital anthropology therefore has to contend with the way culture itself has grown in scale and form, including new dreams and new nightmares about who we are becoming, and who or what should be regarded as modern or traditional. For the anthropologist, the digital is always approached in context. If [biometrics] in India seem to provide better access to welfare benefits, or in China to new forms of [citizen] control, this is because of political choices as to how they will be used. What biometrics as a whole represents is simply the increasing capacities of vast data banks sourced from people that can then be exploited in numerous ways.

Some newish worlds

The term 'newish', rather than new, is important here, since there is no clear divide between unprecedented worlds developed through digital technologies and the gradual transformation of the rest of life as they are impacted by these same technologies. Indeed one of the main trajectories in the development of digital anthropology has been through the previously established anthropology of media. This is a field in which we can all easily follow the gradual transformation of media into a largely digital form. Most of us will now watch what we still call television, but may be increasingly encountered through a variety of screens, including our phones. We can see how newspapers are being challenged by other

forms of news dissemination, which brings ambiguity and precarity to those who would call themselves journalists. All of this has led to a corresponding shift in the anthropology of media (Pertierra 2017). While there is no absolute or clear division, it may still be worth drawing a contrast between 'newish' worlds, which largely could not have existed but for the development of digital technologies, as against the study of the use and consequences of digital technologies by ordinary people.

Digital technologies have given rise to a wide assortment of new populations that may at first appear quite alien. One role of the anthropologist has been to empathetically engage with those populations in order to help us understand both what they do and how to understand the world from their perspective. A pioneer of such work has been Gabriella Coleman (2012, 2014) through her long-term engagements first with hackers and then groups such as Anonymous who have come to occupy political or alternative niches that have been enabled by these new technologies. Her work helps shift our understanding of these groups from mere caricature to having a sense of their own internal debates over how they should or should not intervene politically. In a similar vein, Jenna Burrell (2012) worked with West Africans who became scammers. She was able to balance the focus upon the victims they had fleeced with the conditions of exclusion and poverty that often characterised the situation of the perpetrators of such actions and help us see the world from their point of view.

These hackers and scammers exploit niches created by new digital technologies without which they would not exist. More commonly, digital developments extend trends and possibilities that were already present; for example, through changing the infrastructure behind labour markets. In this instance the new technologies are thought to extend still further a long trajectory by which human agency is suppressed by the increasing sophistication of machines and powerful interests, generally understood as neo-liberal capitalism. An early debate about how digital technologies had extended transnational labour was over whether there was a practice of 'gold farming' where Chinese workers intensively played computer games to win treasures that were then sold on to less assiduous game players in other countries (Nardi & Kow 2010). More recently we have witnessed the rise of what is now called the 'gig' economy, digital technologies, such as smartphone apps, have blurred the boundaries and responsibilities of companies in relation to workers. Ilana Gershon (2017) examined the implications of the career-focused online network LinkedIn as a site where workers now have to perform particular appearances and claims in order to obtain work. She uses this example to show how digital platforms can turn neo-liberal political philosophies not just into new forms of work, but also new ways in which we visualise and understand ourselves as individuals as we craft the way we present ourselves to the world within the dictates of this platform.

Digital technologies have also drastically transformed the time and space of working practices. For example, a vast business complex near Chennai in South India has three periods of rush hour as call centre workers come in to serve markets in Asia, Europe, and North America, respectively (Ventkatraman 2017). There are also digital nomads who can carry out their paid work from almost anywhere. Digital

technologies have caused the collapse of many traditional businesses and ways of working. Perhaps the most forceful example of how an anthropologist can convey the way human beings may become, in effect, an extension of the digital machine has been Natasha Schüll's (2012) careful dissection of the new mechanisms that have transformed slot machines in Las Vegas through increasingly perfected technologies whose sole purpose is keeping people addicted to gambling. Not all these studies focus on the furtherance of oppressive forces. Thomas Malaby (2009), for example, in contrast to Schüll, examines the role of contingency and liberal fantasies that may emerge in the construction of game platforms, using the example of Linden Lab in creating Second Life.

Given their more holistic methods and perspectives, anthropologists are more likely than those in the media or political studies to present digital developments as contradictory. For example, rather than merely dismissing the rise of social media as against more traditional forms of news reporting, they are more likely to investigate particular examples of the use of social media for the dissemination of information (e.g. Chua 2018). Music reveals a constantly changing dynamic, including decommodification (e.g. Spotify), new modes of collaboration for musicians (see, for example, Haworth & Born 2016), and ways they interact with the public (e.g. MySpace).

Another way anthropologists have engaged with these newish worlds is by focusing upon specific digital platforms and their usages. An example is Patricia Lange's (2014) work on how young people create material for YouTube. There is also Michael Wesch's influential visual presentation *An Anthropological Introduction to YouTube.* Jamie Coates (2017) provides an anthropological perspective on the phenomenon of images and ideas going 'viral', as in the cases of the rapid spread of memes. Other media may themselves become the vehicles for the rapid acceptance of assumptions about how, for example, we are supposed to be prone to fake news or to live within political echo chambers where we only hear similar views to our own. By contrast, ethnographic work provides a much more nuanced sense of what people actually believe and why. This is partly because other disciplines mostly depend upon analysis based only on publicly available data such as Twitter, while ethnographers gain access to more private and often more consequential and intimate discussion on, for example, WhatsApp.

Communication media represent an arena where it is generally accepted that the digital has almost entirely transformed the landscape. But anthropologists have recognised equally significant transformations in many other fields; for example, that of money. The impact is vast. We can focus on the way finance capitalism exploded into greater fields of scale and abstraction following the technological developments which created the 'big bang' of 1986, and the further increasing use of digital technologies that lead to still greater volatility in capital markets that contributed to the 2008 collapse of those markets. At one end of this spectrum are the new abstractions of money represented by purely digital mechanisms, such as a 'blockchain', that can produce new currencies such as Bitcoin. At the other end is the way mobile-phone-based money systems such as M-Pesa have led to the enfranchisement of populations in Kenya and

elsewhere who were previously excluded from banking and micro-finance. Here an exemplary anthropologist is Bill Maurer (2015) who has tried to consider the entire spectrum of these new forms of money and payment and their often contradictory consequences. Maurer argues that rather than seeing these consequences in isolation, we should come to regard different forms of money more as a repertoire or scale, which in turn reflects the scales of sociality that have been uncovered in studies of social media.

This section began with examples that are relatively autonomous, being created entirely by digital technologies. But we have gradually shifted to newish worlds of digital media and digital money that are more hybrid extensions to prior forms. By this criteria, most of the infrastructure of our contemporary world is newish. Does the vision of Open Source provide for new models of urban development, since, as with Wikipedia, it has demonstrated the viability of a much more democratic and open politics of creation (Jiménez 2014)? It is hard to imagine design today outside of digitization (Gunn, Otto & Smith 2013), while our sense of place has been transformed by new locational technologies such as GPS, Google Earth and mobile phones. Are digital forms challenging and extending the traditional relationship between museums, art galleries, and objects (Geismar 2018)? What about the enablement of new forms of transport such as driverless cars, new capacities in digital design, or 3D manufacture? These are just some of the fields in which digital technologies have proved transformational (Horst & Miller 2012).

Everyday digital life

The previous section examined groups that exist entirely as a result of digital developments and the wider impact of the digital upon the forms and infrastructures within which we live. By contrast, there is another clear responsibility for digital anthropology to observe and account for the consequences of all these developments upon the everyday lives of ordinary people around the world. This brings us back to a core component of anthropology: traditional holistic ethnography, in which we try to understand how people relate to everything that bears upon their lives. Nobody lives just online, so to understand their involvement with digital technologies we continue to focus on the wider context of their non-digital lives. Since these are general ethnographies of populations, the emphasis will also be on those forms of digital culture that have become more ubiquitous, such as social media and smartphones.

One of the key contributions of anthropology is to counter the constant claims made about the impact of digital technologies that come from more universalising disciplines such as psychology and internet studies. Because their model is the natural sciences, they may experiment with a proximate population, such as US college students, and then extrapolate their results more broadly. We are then told that new digital media has an impact upon attention span and possibly our brains, or that young people are confused as to what a real friend is. By contrast, anthropologists are committed to an inclusive understanding of the modern world that recognises that we need to be equally aware of populations in Africa, East and South Asia, and Latin America, and to be wary of generalizations that are not based on in-depth comparative

studies.

What, for example, is the impact of digital communication technologies on Filipino women who migrate to care for children and the elderly across many regions? An appraisal may include studies of how the populations that remain within the Philippines use social networking platforms such as Friendster and, more recently, Facebook, to keep in touch with those who have gone abroad, but also how this now-global population of migrant workers use new media to retain a sense of Filipino sociality that can mitigate the separation of physical location by creating a more integrated online sphere (McKay 2016: 51-69). Many of these migrants are mothers who left behind their children to be brought up in the Philippines. As the internet replaced letter writing, this radically transformed the communications between mothers and children, from exchanges that could take months to constant daily interaction. Mothers and their children often had quite different views as to what these changes meant for transnational motherhood (Madianou & Miller 2012).

Instead of making universal generalizations, anthropologists may also demonstrate that in some places new phenomena such as social media have had relatively limited impact. For example, in Southern Italy, a place with a flourishing public sphere of people meeting each other around the town squares, there was relatively limited interest in social media (Nicolescu 2016). At the other extreme are the extraordinary findings of Xinyuan Wang (2016) who lived for 15 months inside one of the new Chinese factories that, as a whole, employs some 250 million people who have migrated from rural areas into this industrial sector. Social media has, in effect, become the place in which they now live. Rather than using social media to reconnect with their rural villages as had been anticipated, they use it as a more effective migration into the world of modern urban China than the move to the factory itself. Apart from eating, working, and sleeping, and interacting relatively little with their fellow workers, it is social media such as QQ and WeChat where they spend their leisure time, cultivating a sense of themselves as fully part of modern China and its consumer culture: something that the migration to the factory in itself had failed to achieve. It is often the Chinese digital developments that have both more extensive platform capacities and deeper penetration into the lives of their users than platforms such as Facebook or Twitter.

In the study of digital technologies there is a tendency to focus upon the more unprecedented or spectacular consequences. But, as in the example of the Filipino diaspora, anthropologists will pay attention just as much to what might be considered the more conservative consequences of digital technologies - in that case, bringing families back together online that have been fragmented offline by global migration. In a similar fashion, Elisabetta Costa has shown how Kurdish people reconstruct their traditional lineage organization when the families themselves have become dispersed as a result of decades of conflict in Eastern Turkey (2016). The value of ethnography is demonstrated in that in all these cases we find an appreciation that online activity can only be understood relative to changes that have taken place offline.

The area that has perhaps received most attention is political anthropology, because digital technologies are often seen in popular discussion as the 'cause' of contemporary political transformations. Thus, there is currently intense interest in ideas such as whether Facebook is responsible for the rapid spread of hate speech, such as anti-Rohinga sentiments in Myanmar; whether the Trump presidency is partly a product of Twitter as a platform; or whether a company called Cambridge Analytica employed these technologies to alter the results of elections by carefully and secretly targeting voters. Once again, the role of anthropologists is to contest assertions that are made about these political impacts through more long term and contextual considerations. For example, John Postill (2008) questioned debates about digital political communities, because often these make simplistic assumptions about the prevalence of prior offline communities. If we ask, 'is this online forum a real community?' it makes it sound as through previously everyone lived in such real communities, when actually, as Postill notes, that may not have been the case at all.

Because the appraisal of new technologies is generally [moralistic](), there is a constant tendency to simplify and romanticise the pre-digital world. Going against this trend, anthropologists strive to provide much more specificity to these debates. Victoria Bernal, in her study of Eritrean diaspora politics, examines a series of websites which are best understood not as expressions of national public spheres in general, but rather the very specific circumstance of Eritrean politics: a military regime that created an often unpaid army on the basis of nationalist requirements for the survival of the new nation, but which in some cases became tantamount to slavery (Bernal 2014). Bernal's focus is on the use of online spaces to create but also to skew debate within the diaspora as to how Eritrean people should respond.

Moreover, digital anthropology tends to investigate the ways people regard each other as acting appropriately or inappropriately. The study of Filipino mothers mentioned above, for example, showed that their engagement with digital media opened up new possibilities for moral judgement. Previously, people had chosen media mainly because of cost or access. The Philippines was one of the first regions to make intensive use of text messaging because it was free. Today, most people have phone plans or internet plans, so there is no cost implication behind which communication is selected. The result is that media has become more integrated into social and moral concerns. Nowadays, a person is judged by the fact that they dumped their boyfriend by WhatsApp instead of by phone (Gershon 2010). People in several different regions also avoid discussion of politics on social media because it is divisive and other people let them know this is the case.

Establishing a moral framework as to what constitutes appropriate behaviour online leads to the more general question: how is the normative established? Especially when, for online activity, this seems to develop within months or weeks, as in the use of new platforms such as Snapchat or Line.[2] Each of these platforms grew through an emphasis on some particular trait, such as the ability for images to self-destruct

after ten seconds, or to add a plethora of visual abstractions and animations, capacities which are often then copied by rivals and become taken for granted. So, an important part of digital anthropology is observing and accounting for the rapid manifestation of new normative principles involved in these new forms of communication. For example, the way phones are used to establish what can and cannot be talked about in the Congo or Mozambique (Archambault 2017, Pype 2016). Examining the use of social media worldwide, it became apparent that the meme has developed as just such a mechanism for establishing the normative. Even people with very limited literacy can easily share a meme that expresses their moral views about good or bad behaviour (Miller *et al.* 2016: 172-3).

There is also obvious depth gained by developing long-term fieldwork, as in the extended study of mobile phone technologies in a Bengali village (Tenhunen 2018), since normativity today is not so much established as it is continually changing along with the ever-changing technologies. Historically, anthropologists have assumed that the main force behind the normative was the depth of tradition: what people in many places refer to as their customs. Digital anthropology, dealing with rapid change, represents a striking contrast. As such, what does digital anthropology imply for what anthropology and indeed humanity is now becoming? This will be the subject of the final section.

How we do anthropology digitally

The study of digital anthropology has already gone through several iterations. An earlier review concentrated on the exploration of online communities (Wilson & Peterson 2002), while a later review focused more on the ethnographic approach to digital media (Coleman 2010). A more recent edited collection (Horst & Miller 2012) examined the variety of fields of study, ranging from location to politics to domestic life, as well as the implications for theory and anthropology more generally. It is hard, however, to separate this sequence from developments in methodology, which have also arisen in response to new possibilities created through digital technologies. For example, ethnography often consisted of researching and describing a bounded space and time, where exit from the field site meant the end of the anthropologist's relationships with their informants. But, with social media, the people anthropologists work amongst expect to retain those relationships over distance and subsequent to the completion of the ethnography, which is consequently harder to delineate.

Many new sources of information are now online and anthropologists may replace their traditional notebooks with devices such as voice recording, cutting and pasting from digital sources, or shared files (Sanjek & Tratner 2015). With these new mechanisms for recording and analyzing information, digital ethnography needs to be considered alongside the ethnography of the digital (Pink *et al.* 2016). It may be useful to think about these changes as part of much wider methodological debates. For example, Sarah Pink had previously argued for more attention to be given to the senses or to visual media, parallel to still earlier influences from phenomenology that implied that experience is something that has to be viewed

from the interaction between our bodies and our environments.

This critical assessment of digital ethnography is all the more important since other disciplines have increasingly embraced ethnography as a means of linking the study of new digital technologies with an assessment of their consequences for populations. For example, STS (Science and Technology Studies) has provided several insightful ethnographies of the use of digital technologies of care (Oudshoorn 2011; Pols 2012). These have the virtue of considering not just medics and patients but also new forms of labour, such as data processors, who are often one of the hidden consequences of such technologies. They thereby link equally well to studies in medical anthropology and digital anthropology.

Within the field of digital anthropology, there is a more specific focus upon virtual ethnography, where anthropologists study online worlds and encounters in addition to conventional field sites. The key exemplar of this approach was Tom Boellstorff's ethnography of the online computer game Second Life, a study that retains many of the characteristics of traditional ethnography but applied to an entirely online world (Boellstorff 2008). He shows, for example, how many of the disputes over property ownership and between neighbours online echo those familiar from traditional offline contexts. Many examples can be found within what are often substantial gaming communities such as World of Warcraft (Nardi 2010). Several of the anthropologists involved have provided textbook examples on how to engage in such virtual world studies (Boellstorff *et al.* 2012), examining, for example, some of the difficult ethical issues of observing peoples' behaviours who one might not otherwise know or be able to obtain consent from. Others have looked to use digital technology to find a balance between online and offline that reflect the lives of their informants. For example, they have studied migrants who have become dispersed worldwide but who try to re-integrate their families online (Landzelius 2006).

Digital technologies can also enhance anthropologists' involvement in the dissemination of their research results. The *Why we post* project (Miller *et al.* 2016) created a spectrum of short, highly accessible forms such as YouTube films under five minutes, social media activity, blogging, and a free online university course (MOOC).[3] By making anthropological work freely available online in the languages of our field sites, even traditional ethnographic monographs can become very popular indeed, with that particular project reaching half a million downloads by 2018. These developments in free access mean that anthropological research can be more easily returned back to the often low-income societies that tend to be the subject of much of our research. This is true also for popular online anthropological magazines such as *Sapiens*[4] and journals such as *Cultural Anthropology.*[5]

Changing humanity

The first two sections represent a contrast. One dealt with relatively new worlds created through the

digital, and the other with the more general consequences for peoples whose lives are not especially digitally inflected. The distinction was important partly because they are likely to lead to different conclusions. For example, currently one of the major developing interests within digital anthropology concerns the potential impact of the collection of vast amounts of data, their use in the construction of algorithms, and more generally the massive investments in artificial intelligence (e.g. Kockelman 2013). An example of one anthropological response to these interests is Minna Ruckenstein and Natasha Schüll's (2016) survey of the 'datafication' of health. The emphasis is mostly negative. Data is regarded as at least analogous to the tradition role of capital, creating the conditions for more targeted commodification and new forms of power. Datafication gives unprecedented capacities for surveillance and control which not only predict, but also shape and modify human behaviour. There is also a sense of dehumanization where people come to see themselves more as visualizations of data, rather than simply as persons. Furthermore, these technologies reinforce given differences in gender and other unequal social parameters. As in the previous examples of digitally created worlds, the main emphasis is on groups that have been constructed

around these new possibilities, such as people who identify with the Quantified Self movement[6] and engage in various forms of self-tracking. An alternative focus is the active refusal of such technologies which may now be seen as a form of resistance.

By contrast, the studies discussed under the title of everyday digital life concern populations that either do not particularly embrace or refuse digital technologies, but rather simply accept them rapidly as normative within their daily life. Mostly people engage with the latest digital technologies as smartphone apps. For them, artificial intelligence and algorithms are experienced as, for example, more effective instant foreign language translation services, more effective GPS navigation, or more accurate voice dictation. Far from dehumanising, they see their phone as increasingly aligned with their particular personality and tend to feel bereft if by chance they have accidently left their digital companion at home. They are far more concerned with surveillance by their families than that by companies. With regard to health issues, they are more likely to welcome the degree to which the inside of their own bodies, which previously were largely unknown to them except when they erupted in disease, are now knowable as data. They may pay attention to apps that count their steps, or predict their menstrual periods, and use these for developing healthier or more planned lifestyles.

So, where does all this leave digital anthropology? Modern holistic digital anthropology should strive to combine the best of both these approaches. Ethnography may be employed in the direct study of corporations and states, and alert us to data gathering and subsequent usage. Studies of ordinary populations ensure that we are able to appraise the consequences of artificial intelligence and algorithms through studies of what people actually do on a regular basis with the apps that employ them. Those that focus upon digital practitioners help us appreciate the wider infrastructure of states and corporations and the potential for more malign consequences. The first conclusion is therefore that we need both kinds of

research and both sides of these arguments: an attention to vast forces that may be oppressive, and the equal commitment to intimate and empathetic engagement with ordinary people that respects their views and experiences as authentic. The second conclusion is that the anthropological commitment is based on long-term scholarship, which may include the study of moralistic debates around these issues but as a way to understand them and account for them, rather than simply to affirm the anthropologists' own ideological stance. Thirdly, anthropology should be the discipline that encompasses contradiction and recognises that in almost every instance, the new digital technologies raise new possibilities for both benign and malign consequences, which are usually two sides of the same coin.

Even prior to the rise of digital technologies, anthropologists such as Donna Haraway and Marilyn Strathern had raised profound questions about how other developments, such as those in reproductive technologies, impact upon questions of what it now means to be human. As noted above, one major concern has been with the potentially dehumanising effect of new digital technologies such as artificial intelligence. The anthropomorphism represented by the science fiction robot is now finally coming into being. In Japan, where there is a very high proportion of elderly people, a key interest has been in the development of robots that can then take 'care' of the elderly, incidentally potentially replacing those Filipina caregivers discussed above (Wright 2018). Similarly, the smartphone was referred to earlier as a digital companion: a phone looks much less like a person than a robot, but it may already show still greater scope for a more subtle anthropomorphism. On the one hand, corporations develop artificial intelligence, algorithms, and chatbots and provide digital assistants with names such as Siri and Alexa, which suggests this anthropomorphism is coming from digital innovation. But at the same time, the owner of a smartphone may ignore the built-in apps, and may instead download others, which they then reconfigure so that their phone is anthropomorphic by way of expressing their particular personality: as a highly organised administrator, a creative artist, or a rugged male who can claim all his usage of the phone is based on necessity.

All of the above suggests that perhaps the real problem here lies with the very term 'humanity'. Could this be too conservative, since conventionally it refers to everything humanity has been up to now, but not all those things humanity may in time become (Miller & Sinanan 2014: 15-20)? Humanity might once have been defined as beings that could not fly, but then came the aeroplane. Instead of using terms such as post-human or trans-human, we might want to define humanity as including a latency that is achieved by each new technology. The concluding point is that digital anthropology, which can include the study of both use and consequence, is thereby as much a study of what people are becoming as what technologies are becoming. We now face an extreme contrast between anthropology's initial interest in custom and tradition, compared to the speed of contemporary developments. At the same time, these may be just as expressive of persistent anthropological concerns, such as the nature of normativity. Furthermore, the speed of change makes a still stronger case for the role of long-term ethnographic studies that are prepared to encompass the complexity and contradictions that are intrinsic to an assessment of our new

digital worlds. It seems reasonable therefore to also use digital anthropology to engage in debates about both what humanity is becoming and what anthropology is becoming.

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[1] These are systems that both provide and then act upon positive and negative feedback.

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[2] Snapchat is a picture-based messaging service. Line is another messaging service that strongly emphasises visual content.

[3] *Why we post: social media through the eyes of the world.* University College London (available on-line: https://www.ucl.ac.uk/why-we-post?utm_source=UCL%20Press&utm_medium=UCL%20Press&utm_campaign=UCL%20Press).

[4] *SAPIENS*. The Wenner-Gren Foundation (available on-line: www.sapiens.org).

[5] *Cultural Anthropology*. The Society for Cultural Anthropology. American Anthropological Association (available on-line: www.culanth.org).

[6] The Quantified Self movement consists of people who focus upon the way their bodies and behaviours are increasingly visible as externalised and quantified data.