

Introduction: Towards an anthropology of data

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The world is talking ‘data’. The early cross-disciplinary, business-orientated hype around the potential of ‘big’ data, with its promises of unprecedented insight into social life, has given way. Data now motivates a sweep of dystopian visions, from rampant commodification to the invasion of privacy, political manipulation, and shadowy data doubles. Yet anthropologists have been cautious in taking data itself as their object, even as the social life of data practices becomes manifest in our ethnographies. In this introduction, we argue for an anthropology of data that is ethnographically specific and theoretically ambitious, putting forward a case for why anthropological engagements with the data moment might be not only politically important but also conceptually generative.

Among experts and amateurs, from the spectacular to the mundane, something called ‘data’ has permeated the ethnographic field. In Yogyakarta, Indonesia, a taxi driver tells an anthropologist how he puzzles over the booking apps that allocate rides to him; he considers putting his accounts into ‘therapy’, strategically accepting and declining requests so that he will have ‘better data’ (Sandbukt 2018). On the border between Kyrgyzstan and Russia, an ethnographer studying seasonal migrant labour finds herself concerned by data gathered into the ‘black list’, a tool used by Russian immigration services to make migrants deportable (Reeves 2016). In the United States, a grieving daughter describes how a personal database of memories appears to bring her mother back to life (Hales 2019). From conflicting data about voter turnout in the 2019 Indian elections, apparitions of ‘ghost voters’ emerge (*India Today* 2019). As a viral pandemic encircles the globe, data about infection and mortality rates becomes a matter of international public dispute (Street & Kelly 2020). Anthropologists find themselves needing to make sense of ‘data’ – and not only their own – as an emergent ethnographic object.

At a moment when ‘data’ commonly implies a universalizing epistemology, the essays in this volume attend to data’s multiplicity and particularity, relocating it in diverse local worlds. The growing presence of data in our fieldsites demands this traditional ethnographic work, which foregrounds the practical existence of data, in small forms that complicate and exceed its ‘big’ reputation. This collection starts from the popular association of ‘data’ with digital technologies – networked computing systems that register, store, and analyse ever more information about ever more aspects of life – but it also expands the frame, looking to data’s relations with existing informational forms, such as documentation and accounting, to find continuity, rather than disjuncture. The work collected here charts a course between hailing data as a radical rupture with the past, and recognizing data as simply a continuation of familiar practices of social ordering, by attending to how discourses, practices, and imaginaries of data are configuring and inflecting the familiar in unfamiliar or surprising ways.

In this special issue, we draw data’s apparent novelty into conversation with many of anthropology’s central concepts, from kinship to value to personhood. This introduction demonstrates the necessity of this theoretical project, describing one shape it could take. Our first section is diagnostic, disambiguating different ways that data is talked about and done. We illustrate data’s charismatic hold and review key approaches to its study within anthropology so far. Looking to an earlier period of technological and conceptual innovation – the advent of new reproductive technologies and the anthropological response to them – we identify areas of analytical interest we might attend to in the present data moment. By treating data as at once an empirical concern for ethnographers and an opportunity to revisit key anthropological concepts, the pieces collected in this volume show the potential for a transformative anthropology of data – one that goes beyond updates to the ethnographic record and uses data as a generative site of anthropological theory building.

Diagnosis and disambiguation in the data moment

Data, despite its apparent simplicity in common use, is not simply ‘given’ (as the word’s etymological roots might suggest). What it is, and what it means, shifts. Everyday definitions of data start with the familiar: documents, numbers, building blocks of quantification, governance, and analysis. However, borrowing charisma from computation, data has also acquired a more revolutionary reputation: a powerful entity that shapes commercial futures; an engine of growth that drives institutions to ‘datafy’ themselves in pursuit of profit or efficacy (Fourcade & Healy 2017). To make sense of data, we need to first disambiguate the many uses of the term.

Knowing data

One reaction to data’s ubiquity and polysemy is to insist on its material specificity. ‘Data’ continues to designate concrete, straightforward, empirical stuff (Dourish 2017). It takes the form of spreadsheets, .csv files, digitized archives, hand drawings and notes, or graphs on laptops; it is collected through sensors, database entries, mobile phones, and census work, from questionnaires to clicks. Thus understood, we can trace a decades-long history of ethnographic work on data, including the nature of evidence (Engelke 2008; Hastrup 2004); governmental practices of quantification and accounting (Maurer 1997; Nelson 2015); and the production of indicators by international non-governmental organizations and experts (Merry 2016; Murphy 2017). Data has appeared in the ethnographic record in analyses of ‘audit culture’ in the

1990s (Power 1997; Strathern 2000); studies of the charismatic role of documents in bureaucracy (Hull 2012; Riles 2006); and the seductive power of the numerical (Merry 2016; Porter 1995; Verran 2010).

Anthropologists and historians have also drawn out the importance of colonial bureaucratic practices of enumeration, which underpinned territorial dispossession and enforced a violent legibility on colonized peoples (Appadurai 1993; Scott 1998); more broadly, European empire building relied foundationally on quantification and the ‘avalanche of numbers’ that captured the eighteenth- and nineteenth-century European imagination, as well as the standardization, classification, and accounting that it permitted (Hacking 1990; Poovey 1998).¹ These continuities suggest that data is in fact a familiar concern for anthropologists, knowable through already-existing frames. The data revolution may not be so revolutionary after all (cf. Pfaffenberger 1988).

However, data has come to signify and act beyond these earlier practices. As people around the world reckon with data’s significance, we reopen the definitional question as an ethnographic problem: what is data? As an object of ethnographic scrutiny, data is not merely varied, it is mercurial. What it is can change depending on the use to which it is put, or when one asks (Star & Ruhleder 1996). Data might be a store or source of value, an asset or a liability. Data for the taxi driver in Yogyakarta is not the same thing – either as an object or as meaning – as data for a worker placed on a Russian ‘black list’. Tom Boellstorff and Bill Maurer describe this mercurial character as a consequence of data’s sociality: ‘[D]ata is formed through relations that extend beyond ‘data’ itself; ... what counts as data (and data’s referent) is a social process with political overtones; and ... data is always in real-time transformation in ways that cut across notions of nature and culture’ (2015: 3-4). These relations, processes, and transformations are at the heart of this special issue. Understanding data as socially constituted has consequences for how we understand both academic disciplinary and public responses to data’s growing prominence.

Data and disciplines

For many, ‘data’ appears to transcend old disciplinary boundaries and to promise new synthetic knowledges.² For others, this universalist drive represents a threat to the particularity of disciplinary expertise. Sociologists have described the growth of ‘social’ big data collection by commercial firms as a threat to their empirical authority (Savage & Burrows 2007); geographers worry about being ‘left behind as others leverage insights from the growing data deluge’ (Kitchin 2013: 262); social scientists have pursued data as a means to know the social (e.g. Marres 2017; Tinati, Halford, Carr & Pope 2014); historians have set about applying digital methods such as text mining, visualization, and mapping techniques to their topics (Mullaney 2019a; 2019b); and humanists continue to pursue digital, data-driven projects (Gardiner & Musto 2015; Terras, Nyhan & Vanhoutte 2013). These responses continue a history of promise and threat that dates back at least to the advent of computing itself (see Seaver, this volume).

What, then, of anthropologists? With some exceptions (e.g. Crowder, Fortun, Besara & Poirier 2019; Knox & Nafus 2018; Madsen, Blok & Pedersen 2018), anthropology has largely responded to the data moment by figuring ethnographic fieldwork as a necessary or more sensitive qualitative complement to large-scale data collection and analysis. It has done so in two senses. The first positions ethnography as a counterpart to data, what Boellstorff (2013) has noted as the presentation of “‘ethnography’ as the Other to big data’. From a position that takes data to be a competitor epistemology, ethnography

is either at risk of losing its epistemic territory or an under-appreciated corrective that can balance out the reductionism of large-scale, quantitative methods. A now familiar critical stance is that big data simply misses out all that is human, and embodied, about living in the world. For example, the tech ethnographer Tricia Wang (2016) has argued, within the corporate context, that ‘big data needs thick [ethnographic] data’, drawing on conventional arguments in favour of mixed-methods research (cf. Seaver 2015).

The second approach finds anthropologists attending ethnographically to data practitioners themselves. We can already point to detailed analyses of the work and worlds of data scientists (Lowrie 2018; Williams 2018), Quantified Self trackers (Lupton 2013; Nafus & Sherman 2014; Ruckenstein & Schüll 2017), border management regimes (M’charek, Schramm & Skinner 2014), and global health experts (Biruk 2018). With these ethnographies come methodological challenges. Taking their first steps into the field, ethnographers find that their fieldsites are often distributed, access is ethically fraught, and technical practices are opaque (Knox & Nafus 2018; Seaver 2017). Nonetheless, fieldsites for those who seek to study communities and practices data continue to multiply around the world: Quantified Self communities, data mining start-ups, clandestine data centres, biometric infrastructures, and more.

Many other contemporary ethnographers may be more accurately described as accidental ethnographers of data. They do not set out to study data, but rather find it central in the lives of the people with whom they work. To study the nation-state, health systems, judicial systems, the economy, or scientific communities is to come up against infrastructures, practices, and discourses of data. A study of indigenous kinship might lead one to a genetic database, and from there into issues of sovereignty, ownership, and biocapital (Reardon 2017; TallBear 2013). An analysis of courtrooms might lead to software developers developing predictions of recidivism or newly spatialized carceral imaginations (Benjamin 2016; 2019). These accidental ethnographers of data will find it tightly knitted to core anthropological themes: kinship, economy, religion, law, and so on. Data cannot be set aside, because it is bound up with the development of new norms, with changing ideas of personhood, place, kin, and more. Encountering data requires anthropologists to revisit their theoretical commitments.

Data as theory

The rise of data has troubled settled agreements and reopened normative discussion about matters of long-standing anthropological interest. When people turn to data to know themselves and their world, we find the meaning of social concepts changing. To make visible some of these transformations, we draw a parallel between the current data moment and an earlier moment where new technologies opened up and challenged the meaning of core anthropological concerns. The technologies and discussion around New Reproductive Technologies (NRTs) constitute a prior moment of transformative technological change which gave rise to broad anthropological re-theorizing. By reading through that moment, we set out to identify similar themes critical to the current juncture.

A brief recapitulation of NRTs – both their technical capacities and the resulting work in anthropology – is useful. As the now familiar account goes, in the early 1990s, the development of in vitro fertilization techniques led to new possibilities for human procreation, and reopened public discussions about how kin could be conceptualized. This sudden prominence of NRTs in Euro-American consciousness demanded that the public – and anthropologists – reconsider a fundamental and taken-for-granted

aspect of life: reproduction. From conception to parenthood, *in vitro* new technologies challenged understandings of the artificial and the natural, and assumptions about what is available for human intervention (Wagner 1977; 2016 [1975]); in so doing, they undid the very grounds upon which such categories organized and shaped the world in the first place (Strathern 1992a; 1992b). As legal cases made their way through different national courts, and teams of lawyers debated the new meanings of parent and child, in anthropology, two moves followed.

First, new technologies meant new fieldsites: kinship was no longer the domain of the domestic, nor the way to characterize the exoticized other – it was in laboratories, hospital waiting rooms, and, more recently with the advent of consumer genetics, corporate boardrooms (Franklin & McKinnon 2001; Reardon 2017). The entities that populated these fieldsites – such as cell lines, embryos, technologies, technical procedures – shifted in and out of existing categorizations, creating a need for conceptual re-theorization (e.g. Thomson 2007). Second, kinship was suddenly once again a lively vernacular social category, giving it a new hold on the anthropological imagination (Franklin & McKinnon 2001: 173). A shared public and academic question emerged: how would people orientate themselves to what seemed to be a tectonic shift in how they conceived life, and yet was, at the same time, uncannily familiar in the social forms it reproduced? (Franklin 2013).

Today, we see ‘data’ moving research similarly in both of these registers: it opens up fieldsites, and it prompts questions about what is new (and what is not) in the way it reproduces the social. While the former is reflected in ethnographies of data practice, the latter, more theoretical, concern is still emerging. Drawing from the legacies of NRTs, we reflect on what an anthropology of data which is both attentive to shifting tectonics and similarity of form might attend to. In what follows, we tack back and forth between ethnographic and theoretical work on data, and critical commentaries on NRTs, using the comparison to draw out categories troubled, presumptions that no longer hold, and novel contours to social life.

Calculative compositions

Like NRTs, data collection opens up new aspects of life for intervention and manipulation. The body is an ideal example: iris scans, facial recognition, gait analysis, voiceprints, and even analprints (Park *et al.* 2020) make new markers of identity accessible and claim to surface deeper meanings about people. There is also the routine but voracious collection of mundane data online – data on everyday intimate, personal, private activity – framed as a source of valuable insight (Couldry & Mejias 2019; Zuboff 2019). Where NRTs stressed the binary between the natural and artificial, these data practices draw into dispute the interior and exterior, the intimate and the productive, and the private and the public.

These new forms of visibility are also new arenas for calculation. The presence of data asks people to reinvest in the power of numbers (Porter 1995): the idea that nothing can escape quantification and ceaseless calculation. Consequently, the data moment also asks us to refocus our anthropological attention on social practices of quantification and measurement. While quantification and numbers have often been analysed (and thoroughly critiqued) as being seductive because they simplify and reduce social life (Merry 2016), we frequently find data used to figure life as extremely complex. From the neuroscientists in Rayna Rapp’s examination of big data neuroscience who end up looking for a ‘needle in a haystack’ (Sullivan 2013, cited in Rapp 2016: 8) to the

government officials in Louise Amoore's (2006) accounts of new forms of data-driven securitization who warn that there are untold threats knowable through the data, big data is understood by many of its practitioners to replicate the messiness and complexity of life; renowned MIT computer scientist Alex Pentland calls his work with big data 'reality mining' (Eagle & Pentland 2006). But we might say, as Franklin said of IVF, that data is both 'like and unlike what it imitates' (2013: 8). The 'insight' data gives works through the collapse of the tension between entities and their representation in data, such that its proponents can claim that 'your data' knows you better than you know yourself (Douglas-Jones, this volume). In so doing, however, it also makes 'yourself' newly available for reworking, re-assimilating, reconfiguring, re-evaluating. 'Deeper insight' is revealed as, in fact, dependent on creative acts that make people (or communities, or things) tractable to emergent forms of governance, from state interventions to grassroots appropriations to self-directed bodily optimization (Nafus & Sherman 2014; see also Nair, this volume). Within the representational logic of many big data practices there are therefore simultaneous enactments of both conservation and transformation. This demands an equal sensitivity to the constitutive tension between these two qualities in our critical approaches. This is apparent in, for example, Simone Browne's analysis of biometric data collection, in which she takes Frantz Fanon's notion of 'epidermalization', employed to describe the 'marking of the racial Other' as a fractured 'body out of place' (Browne 2010: 134), and reworks it as 'digital epidermalization', in order to take account of how the apparently disembodied and neutral technologies of contemporary biometric data collection operate to profoundly destabilize the ontological security of black bodies (see also Nair, this volume). Here, technologies that are claimed to be beyond race (Browne 2010: 143) are revealed as the mechanisms of racialization itself.

Thus the challenge arises: how to handle the tension between the claims made on behalf of data, and the realities of data's effects? This is one of the pressing questions for an anthropology of data. Scholars across disciplines have remarked on shifts or displacements in the idea of knowledge production at work in the way people make claims with data, particularly big data (Walford 2020), as, for example, when practitioners suggest that aggregate units such as 'class' or 'gender' are no longer relevant in the face of the hyper-granularity of big data (cf. Cheney-Lippold 2011). Shifts such as these move knowledge production into familiar but not quite recognizable epistemological terrain. Natasha Dow Schüll notes that Quantified Self practitioners reach uneasily for terms such as 'quantitative autobiography' (2019: 31) in order to capture the way their self-knowledge slips between fact and fiction. In a different context, Orit Halpern uses the term 'communicative objectivity', to signal a 'new aesthetic and practice of truth; a valorization of analysis and pattern seeking' (2014: 15) discernible in the construction of 'smart' data-driven environments. Cateljine Coopmans's description of data mining as a form of 'artful revelation' (2014: 37) plays exactly with the trope of hidden depths and visible surfaces experienced by analysts of data sets. Similarly, Louise Amoore characterizes the practices employed by the US government to 'flag' the presence of terrorists 'in the data' as working through an 'ontology of association' (2011: 27), in which disparate data points are connected up temporarily in order to create a fleeting, but potentially life-changing, risk-based and often racialized identity. In these examples, key epistemological principles that have commonly been ascribed to scientific knowledge – universality, replicability, objectivity,

stability through time – no longer fully apply to the claims being made, and yet the resulting analyses are taken as truth.

While pattern analysis, temporary association, and revelation are familiar to Euro-American sensibilities, they also lead to conclusions that are difficult to fully recognize, not just analytically, but in terms of their representational construction, legal status, and social and ethical implications. In data's torqued extensions of what is already known, then, quantification and measurement are not just social practices, they are constitutive of specific forms of sociality that claim to reach beyond the social categories that social scientists are fluent in. Anthropologists of data need both to develop a sensitivity to the claims made of data's capacity to reshape the world, and to keep a firm grip on the tools at hand to anchor those claims in specific histories of practice and thought.

Retention and reinvention of form

Drawing on such histories will allow anthropologists to nuance the wider debate on data, which often relies on an overly simplified relationship between the old and the new. Numbering and enumeration are powerful, and as we have mentioned, data belongs to calculative regimes that rest on prior histories of listing, counting, and specifying (Porter 1995). The creation of data by nation-states to tell stories about people and place is rightly analysed and critiqued as today being in continuity with colonial violence (Coudry & Mejias 2018; Kukutai & Cormack 2019; Thatcher, O'Sullivan & Mahmoudi 2016), retaining administrative legacies stark in national statistics (Isin & Ruppert 2019; cf. Hull 2012). Biometrics, Simone Browne (2015) points out forcefully, is a direct descendant of Victorian practices of anthropometry and, before that, the practice of branding slaves, which coerced the body's surface into a determination of their identity as property (see also Chun 2009). But these are not the only histories to tell of data. Halpern (2014) argues that it makes little sense to consider imaginaries of data-driven self-regulating 'smart cities' without simultaneously drawing links to cybernetic imaginaries that accompanied earlier eras of computational dreaming. Anthropologists need to look to such histories; but they also need to ethnographically trace out the means by which the contemporary data moment is reworking and reshaping such histories in ways that have yet to be fully understood.

Here, we take inspiration from critical archivist Ann Laura Stoler, who asks how imperial legacies of inequality endure so recognizably and yet, at the same time, so invisibly – not as 'mimetic versions of earlier imperial incarnations' but 'refashioned' to be 'ineffably threaded through the fabric of contemporary life forms [such that] they seem indiscernible as distinct effects, as if everywhere and nowhere at all' (2016: 4). For example, if the legacies of quantification, and the concomitant 'birth of statistics', can be credited with inventing the idea of the 'normal' (Hacking 1990; cf. Foucault 1977) – and, of course, the 'abnormal' – which has subsequently woven itself into the way many people now conceptualize the world, then the turn to big data might be seen as permitting the exploration of other charismatic and emergent forms of social distribution, perhaps along the lines of what Michelle Murphy (2015) calls 'phantasmagrams ... intangible form[s] brought into sensibility as a palpable presence with the help of quantitative practices' (see also Murphy 2017). Murphy is here thinking specifically of economic forms, but we might also think of the way recommendation algorithms draw on vast amounts of consumer data to redistribute people according to logics of 'likeness' and 'liking' (Lury & Day 2019; Seaver 2012). Whilst there is no

doubt that contemporary data practices are forms of ‘infopower’ (Koopman 2019), it is an open ethnographic question as to what specific shapes these forms are taking.

As Minna Ruckenstein and Natasha Dow Schüll argue, ethnography here becomes a means to negotiate the complex power dynamics that are woven through datafication, ‘by revealing how data and its technologies are taken up, enacted, and sometimes repurposed’ (2017: 265). Whilst contemporary data practices often present familiar power dynamics, people are also taking hold of data in projects of refusal and resistance, whether Data for Black Lives (Watson-Daniels *et al.* 2020) or the enlisting of citizens in scientific initiatives (Gabrys, Pritchard & Barratt 2016). As Dana Greenfield suggests, following Michelle Murphy’s lead, self-tracking data practices might also be seen as a form of ‘counter-conduct’ (Murphy 2012), in the vein of the consciousness-raising activities of feminists in the 1960s and 1970s, in which women appropriated speculums to do their own vaginal examinations (Greenfield 2016: 134). Stories told with and about data matter: both histories of specific data forms and the knowledge that is folded into contemporary data-driven practices and discourses produce specific configurations of resistance and assimilation.

Anthropology has much to offer current critical engagement with data, not least by decentring the focus on Euro-America, which at present dominates the scholarly literature on the subject. Established anthropological debates around personhood, relations, society, nature, the state, and value are all valuable tools with which to theorize the emergent phenomenon of ‘data’ as we have described it. However, it is also clear that an anthropological engagement with data demands that anthropologists develop and modify these theoretical approaches in order to take account of the only partially recognizable social and cultural forms that data practices are producing. This will require an openness to other disciplines as much as a consolidation and extension of our disciplinary conventions. Aptly, it is in this spirit of conservation and transformation that we approach an anthropology of data.

Essays in this volume

The pieces collected here explore a range of possible directions for an anthropology of data that is attentive to historical continuities and disjunctions, and to the conditions for thought that the present data moment has engendered. They explore these broad concerns in particular locations, drawing out the significance of data for topics of long-standing anthropological concern. Here we introduce and gather them together in four thematic areas: aesthetics, temporality, economy, and composition.

Data aesthetics

We begin with Vijayanka Nair’s detailed ethnography of *Aadhaar*, the nation-wide biometric identity programme of the Government of India. Tracing the project from its policy inception into registration offices and, eventually, to the courts, Nair observes a shift in the programme’s purpose. Early in its history, *Aadhaar* was framed as a tool to help citizens prove that they were indeed who they said they were, merely registering an already existing social identity. Yet, as the system took shape, the programme’s central task turned from verifying ‘are you who you say you are’ to the much more vexed question of ‘who are you?’ Moving back and forth between the database and its reception, Nair finds that various technical aspects of *Aadhaar*, from the shape of the registration interface to the construction of the database, re-stage the broader tension between individuality and dividuality in which Indian citizens have often found

themselves caught as they negotiate their political agency. Paying attention to the aesthetic ‘surface’ of the database – the literal, bureaucratic form through which data is made – Nair demonstrates that ‘being translated into data was a complex *process*’ (original emphasis).

Contemporary data discourses often claim for data a privileged access to deeper social reality; through attention to the process of ‘becoming data,’ as Nair puts it, we see the contingencies and flaws inherent in ‘dataism’ (van Dijck 2014). There is more to data than representational adequacy, as Nair’s ethnography demonstrates. Data’s aesthetic form, whether in the design of interfaces or the shape of visualization, elicits social effects. In Nick Seaver’s essay, we encounter a form of data aesthetics endemic to contemporary machine learning: the representation of culture as a mathematized, mappable space. To make sense of contemporary music recommender systems, which analyse user interaction data to create ‘music spaces’ full of users and music to be recommended, Seaver tells the history of a related technique with roots in anthropology: multidimensional scaling. Tracing the interlinked history of anthropology and computing through the 1960s and 1970s, Seaver finds that spatializing practices are used by post-war cognitive anthropologists to grant elusive ‘cultural’ phenomena a sense of reality by borrowing from the world of physical objects and geographical distance. Spatializing data creates new surfaces, transforming sparse and discrete data points into apparently continuous cultural environments. Nair’s and Seaver’s essays suggest the importance of a move away from a representational critique of data; their analyses demonstrate the effects that data has in the world irrespective of its accuracy. An aesthetic sensibility, and attention to the persuasiveness of form (Strathern 2005: 10; cf. Riles 1998), opens up critical readings of data beyond representational paradigms.

Data times

Several essays in this collection attend to the ways that data is caught up in temporalizing projects. In conventional critiques, data’s apparent fixity contrasts with the dynamic world it is marshalled to represent. Anthropological approaches to data recognize, as Tom Boellstorff (2013) has argued, that ‘data is always a temporal formation’ – it is *dated*, sampled from a particular moment in time. But anthropologists can do more than relocate data in its proper temporal context: we can examine how data is enlisted in efforts to produce new temporalities.

Data times are diverse, competing, and often contradictory temporal frames. In Tahani Nadim’s analysis of the material stuff of natural history archives, she reads digitized and physical records of biological species together, finding the temporalities of both data collection and storage entangled with the history of colonialism. Nadim’s essay expands our temporal horizon, spanning from early pen-and-paper days to new methods of DNA barcoding. Those new methods, like many data initiatives, distinguish themselves not only by their ‘bigness’, but also by their claims to speed. Advocates for new techniques bemoan the ‘taxonomic impediment’ – the slowness of conventional methods for collecting, analysing, and classifying biodiversity data – and promise a future in which DNA sequencing data will provide a total archive of earth’s animals, plants, and fungi. The speed of this new data is not only a resource, but also a demand: this digital salvage taxonomy requires urgent action before the anticipated decimation of earthly biodiversity arrives. If the future can be caught in data before it is destroyed, it can also be reshaped to retell the past. Nair asks what it means for postcolonial India

to be a world ‘leader’ in biometrics-based governance, as both people and technologies are enrolled making the data cosmopolis of Digital India.

The relationship between data and imagined futures takes on a new concreteness in the ‘data bunkers’ described in A.R.E. Taylor’s contribution: here, data is not fundamentally static and durable, but rather a vulnerable collection of networked traces, always at risk of being wiped out of existence by catastrophic events. Anxieties about future data loss manifest in a concern for the physical arrangement of information, the location of backups and of the wires along which data flows, when every connection is a potential risk. These bunkers, often repurposed Cold War bomb shelters, reach forward and backward in time for their meaning, showing what happens when the protection of data and its integrity displaces the now-dated image of the family hunkering down with canned food. Data times appear in myriad forms across these essays, unsettling accepted genealogies and taken-for-granted futures of the data present.

Data economies

Given the entanglement of data and capital described above, it is not surprising to find concerns about economy threaded through the essays. In 2016, the Financial Accounting Standards Board declared that data should potentially be listed as a separate ‘tangible corporate asset’ on balance sheets, though as yet with no agreed means of calculating ‘fair value’ (Monga 2016). But across the essays in this collection, data is made valuable in diverse ways, entering economies not always recognizable as financial. Hannah Knox, in her essay on the careful and hopeful acts of energy trackers, shows how the value of data is both about saving money on heating bills and about a new understanding of the home gained through working with the data sets over large coffee shop tables at meet-ups. At a moment when ‘data-driven’ decisions are commonly valorized, Knox’s ethnography of environmental data presents the complex unfolding of this drive, as people work to make sense of data produced by sensors in their homes. A concern for data – and for giving data force – draws people into new relations, and data generates forms of relationality that challenge conventional ethnographic imaginaries. Knox puts forward the ‘hack’ as a method for anthropological engagement with data practices – one which takes data ‘not just as a stable representation that we need to deconstruct, but also as a means of engaging with relations that are imprecise and unknown’. Situating anthropology in data streams and assemblies as people worry and wonder about their home’s energy consumption, Knox asks: how can we think data with and through capitalism?

Antonia Walford’s essay about environmental data collaborations in the Brazilian Amazon presents another setting where the value of data is multiple. The data economies of the Large-Scale Biosphere-Atmosphere project are those of scientific collaboration, belonging to complex relations and socialities. Walford’s close attention to how data is made, and its capacities for transformation, gives us insight into its conceptual flexibility as it moves between people with different relations both to it and to each other. For some, data is valuable because it takes work to collect, but for others, it has value because it can be made into something else, used and used again in future research collaborations internationally, beyond Brazil. By foregrounding the labour involved in the generation and reproduction of data’s social value – nuancing the alienation, ownership, and rights in and for data – Walford’s analysis demonstrates that to consider data as merely a commodity or currency is to overdetermine what else it might be. These details offer ethnographic differentiation to imaginaries of a global

data economy, and provide a counterpoint to the clean association of data with financial value.

Data compositions

Nair's and Knox's essays illustrate how data imaginaries can serve to compose and recompose 'publics' in different forms, through the centralized operations of a government database or the distributed interpretative work of local enthusiasts. Rachel Douglas-Jones's essay zooms in on the act of composition itself, tracing how 'bodies' of data come to refer both to physical bodies and to bodies politic; examining how data is thought of as a means to knowledge about such bodies. How might data collection be shaped to invoke new knowledges, and to what ends? Douglas-Jones begins with data on and for the physical body, looking at Scandinavian communities convened around the use of everyday tracking devices. She examines the cultural understandings of the body that underlie efforts to compose sovereign individuals who are coextensive with their 'personal' data. Moving from the sovereign body to the sovereign people, she shifts the site of analysis to Indigenous Data Sovereignty movements. Here, what data is, and is about, becomes a matter of how stories are told and how prior modes of collecting data (though government statistics) give shape to what data will be, and how those peoples will be known.

Such data analytic practices appear to validate long-held anthropological ideas about persons and groups (Strathern 1992c): datafied persons are conspicuously partible, decomposed into collections of interests for the purposes of advertising and reaggregated into countless new collectives along axes of partial connection. But the power to aggregate and disaggregate – to classify or to individuate – is not evenly distributed. These questions of the power to define come forward in Sarah Blacker's account of a report on the environmental and health effects of toxins flowing through Lake Athabasca in Alberta, Canada. The object at the centre of Blacker's analysis is a technique known as the 'three-track methodology', which was designed to allow the inclusion and recognition of Indigenous knowledge within official policy-making. Put to use under fraught political conditions, the methodology represents an attempt to compose data in such a way that it can be legible to Western science, recognizable as policy-relevant. Blacker analyses how different kinds of knowledge are made into data, working through the aesthetic, temporal, and incommensurable dimensions present in the making of contamination evidence. Her essay suggests that data cannot be read without its national and historical framing – framings which become part of the question 'what is data?'

In both Blacker's and Douglas-Jones's essays, data shows its capacity for composition, bringing persons and data into new social and political formations. Both accounts refuse the spatialization of a technological timeline (Fabian 1983) when considering the uses to which indigenous knowledge and data will be put. An anthropology of data works towards developing theory to accommodate data's compositional capacity, and, we suggest, contributes to re-composing anthropological attention at the same time.

Cori Hayden's contribution turns to another form of composition, analysing how concerns about connection and contagion from late nineteenth-century crowd theory have become newly relevant with the emergence of online 'crowds' that are at once the subjects and objects of massive data production. As she writes, '[C]rowd theory's distinctive preoccupations, from the potentially destructive but also generative

force of emotional contagion and suggestibility, to the peculiarly more-than-human heterogeneity of crowds, to a concern with how ineffable energetic forces travel, have come so alive in recent discussions'. Where the power of 'big data' is conventionally associated with its size and scope, Hayden traces an argument for attending to the modes of connection within the crowd, the shape of the network through which social intensities flow and act. Through a careful reappraisal of work by notorious theorists like Gustave Le Bon, Hayden demonstrates the value of expanding our theoretical frames of reference when working to understand such apparently novel dynamics as social action in online spaces. The presence, availability, and behaviour of data in these spaces prompts the revisitation of questions central to the crowd theory of the nineteenth century.

In his afterword, Bill Maurer recognizes across these essays a concern for data's transformative potential – for its capacity to produce new social compositions while indexing the old. In spite of its association with static records and fixity, data is lively. In asking how we might apply this insight to the systemic inequalities reinscribed by many of the data practices we encounter in this special issue, and in our everyday, Maurer turns our attention to the politics of data. How might a 'machine ethnography' (Kockelman 2020: 351), learning from data activists, generate an alternate data politics, using the instabilities within systems of inequality to chart through them 'new paths' of transformation? (Milner 2019).

Conclusion

Data is generated for and drawn into existing social worlds and problems. In data practices, we recognize continuities with deeper pasts, with projects of society making and attempts at 'managing' people and their worlds. How it will come to speak to and shape those worlds and problems cannot be known in advance. The anthropological capacity to critically regard the claims of the new, and to see how old ideas appear in new guises, is necessary at a juncture where new injustices emerge in the name of new freedoms.

As a powerful generic, linking widely varying practices and objects to each other through its apparently modest epistemic form, an anthropology of data should, following Marilyn Strathern (2014), recover the specifics of this generic, locating 'data' in its contexts. But, as the essays in this collection demonstrate, it remains necessary and generative to think data across sites. From the informatic rendering of genomics (Tutton & Prainsack 2011) to the citizen as a digitally rearticulated configuration of domination and resistance (Lyon 2008; Ruppert 2012), or the vast Earth BioGenome project as systems of exchange flourishing through data, social practices are valued on data markets that exist at the edges of conventional regulatory apparatuses (Gerlitz & Helmond 2013; Maurer 2015). Much is being worked out. These studies, and many others like them, demonstrate the immense intellectual potential of the social study of data. We close with call for further work that thinks across sites and settings to produce concrete theoretical formulations. An anthropology of data provides ethnographic thickness and sited-ness to counter data's ideologies of objectivity; it can also open up new conceptual approaches for thinking with and about social worlds, as they are used, made, and done through data. For data makes relations, and it is the careful analysis of the consequences of this capacity to mould and reshape hoped-for futures towards which an anthropology of data should direct itself.

NOTES

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¹ For work that directly draws such comparisons between contemporary datafication and colonialism, see Couldry & Mejias (2018); Dourish & Mainwaring (2012); Isin & Ruppert (2019).

² Out of cross-disciplinary engagements, the reflexive field of critical data studies has emerged as a transdisciplinary formation (Dalton & Thatcher 2014; Kitchin & Lauriault 2014).

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Introduction : Vers une anthropologie des données

Résumé

« Données » : le mot est sur toutes les lèvres. L'engouement initial, interdisciplinaire et à vocation commerciale, autour du potentiel des « mégadonnées », et leurs promesses d'éclairage inédit de la vie sociale, est retombé. Les données inspirent désormais une déferlante de visions dystopiques, de la marchandisation effrénée à l'invasion de la vie privée, en passant par les manipulations politiques et

les mystérieux doubles numériques. Les anthropologues, cependant, sont prudents lorsqu'il s'agit de prendre les données elles-mêmes comme objet d'étude, alors même que leur place dans la vie sociale devient manifeste dans nos travaux ethnographiques. Cette introduction défend une anthropologie des données ethnographiquement spécifique et théoriquement ambitieuse, expliquant pourquoi l'intérêt des anthropologues pour l'ère des données pourrait s'avérer non seulement politiquement important, mais aussi conceptuellement constructif.