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Metrics

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Numbers, enumeration, and the quantification of contemporary life seem to govern our existence more and more. Particularly since the dawn of the twenty-first century, the importance of quantification for governance has grown, and anthropologists have increasingly turned their attention to the ramifications of metrics, or numeric representation that translates assumed realities into numbers (Rottenburg & Merry 2015: 2). They study whether and how the production, synthesis, analysis, and use of metrics is tied to the rise and decentralization of audit and accountability in contemporary capitalism. This entry will first provide a theoretical framework for the anthropology of metrics, drawing on science and technology studies and the history of science. Then, it will discuss how anthropologists have analysed the social impact of enumerative practices. Looking at the practices and infrastructures that produce metrics and that metrics in turn produce, this entry will highlight the importance of colonial legacies for shaping what is ‘knowable’ in the realms of global governance, economics, and health. Finally, the entry will point to tensions at the heart of contemporary critiques of metrics: in our ‘post-truth’ world, these critiques cannot reject the usefulness of truthfully describing and estimating human phenomena. However, these critiques foreground the idea that metrics are always just one form of evidence among many.

Introduction

Since the dawn of the twenty-first century, the importance of quantification for governance has gained momentum, and anthropologists have increasingly turned their attention to the ramifications of numbers, enumeration, and the quantification of contemporary life. As historians and philosophers of science and technology have made clear, statistics, and the rendering of the world into numbers, have long played a fundamental role in the rise of the modern nation-state (Foucault 1973; Porter 1990; Hacking 1990; Desrosières 1998; Scott 1998). For example, quantification practices co-created the notion that ‘populations’ existed and could be governed from above (Foucault 1973; Scott 1998). Thus, numbers have long contributed to giving meaning to various aspects of modern and contemporary life. What is new in recent decades, however, is that the increased use of metrics has led to ‘new forms of global governmentality’ (Shore & Wright 2015: 22). This means that our lives are increasingly governed by numbers and numerical surveillance – not only those used by nation-states, which have long used numbers as a means of governing from above, but also by non-state forces. In this way, these metrics increasingly define what it means, for example, for educational or health institutions to be effective or for individuals to be healthy and happy.

Metrics, or the standard means of measuring or evaluating processes and phenomena for the purpose of governance, are the ‘translation of (assumed) realities into numbers’ (Rottenburg & Merry 2015: 2). Their

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production, synthesis, analysis, and use are tightly tied to the rise of audit and accountability in contemporary capitalism, where governing practices such as assessing corporate sales performance or student achievements become more decentralised (Power 1999; Strathern 2000). These numerical representations are often presented as objective truth, yet they are produced through technical and social practices that are always at least partially specific. Most statisticians and data scientists producing quantified data and syntheses of, say, 'gross national products' or 'burdens of disease' know that there are many reasons for why these simplified metrics are not perfectly objective. This can be due to a human element of designing and implementing surveys, unclear or distorted categories in which data are placed, missing data, changing statistical equations, and statistical uncertainty. However, because these subjective components can be neatly packed away when metrics travel, the power they have in determining national budgets, international funding flows, social justice claims, and so on, is considerable.

The metrics discussed here are not merely numbers, which have multiple points of historical and geographical origin. Instead, they are the indices, indicators, statistics, and biometric standards used on the part of governments, international and non-governmental organizations, private companies, and governance scholars. They are meant to be replicable and universal, creating comparability between different countries, economies, corporate entities, or populations. According to Vincanne Adams (2016), these metrics were born out of a desire in the West to aspire to the universal, as well as out of the rise of statistics that occurred simultaneously with the ascent of the modern nation-state, serving 'as the invented conceptual counterpart to the hubris of the age of imperialism' (Adams 2016: 20). The anthropology of metrics investigates the politics of evidence, analysing why certain numerical forms, whether crime rates or funding flows, are taken as legitimate over other (less numerical) forms. It also pays close attention to the ways that counting practices and their associated categories can produce the very phenomena that they are supposed to measure. This can occur when sorting and separating phenomena into categories that come with built-in theories about the world – like degrees of 'development' or economic prosperity. Here, specific notions of what makes a good life are suggested and perpetuated by acts of measurement. The proliferation of indicators and rankings is thereby 'creating new forms of power and governance, and new kinds of subjectivity[1]' (Shore & Wright 2015: 22), as institutions and individuals are assumed to be appropriate entities for external audit and governance *through* numbers. This includes how universities in the United Kingdom, for example, are now ranked specifically by the quantified impact of research by the Research Excellence Framework, which has material effects on their funding and the focus of their activities (Stein 2018).

Some authors have included the ways that numbers and counting practices have wide and varied symbolic and practical meanings in different cultures within an 'anthropology of numbers' (Crump 1990). Most of the anthropology of metrics, however, focuses specifically on the use of numbers, statistics, and counting technologies in the practice of governing, at different scales of human experience. This entry will first

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provide a theoretical framework for the anthropology of metrics, which stands in conversation with science and technology studies (STS). Anthropologists of metrics both contribute to the larger interdisciplinary STS conversation and speak beyond it by using their discipline's particular methodologies, including ethnography and participant-observation. They investigate infrastructures and practices of measurement and they pay close attention to how these impact the lived experiences of both practitioners and targets of technologies of measurement. For example, numerical surveillance on the cellular level – like counting the quantity of virus in a given amount of bodily fluid – has become a language that some living with HIV/AIDS in Miami, Florida use to describe their 'suffering, personal triumph, and achievement' and to define their personal experience of risk (Sangaramoorthy 2012: 293). Next, the entry discusses engagements with metrics within the field itself, tracing histories of the impact of numbers and outlining key contributions such as anthropologists' analysis of how metrics in the realms of global governance, economics, and health shape our lived experience and institutions.

Finally, the entry will point to anthropologists' ambivalence toward metrics. Although the focus of this entry is on the anthropology *of* metrics, that is, with metrics and their efects as central objects of study, anthropology is also done *with* metrics. Applied anthropology in business and development, for example, makes use of both quantitative and qualitative methods. A further ambivalence arises with the conflict between qualitative and quantitative approaches to understanding the world around us. It is reflected in critiques of metrics that argue for the importance of stories over numbers (Moats 2016) or for situated knowledges[2] over a singular, objective truth (Haraway 1988). Yet, we exist in a world where scientific expertise in general and statistics in particular are being cast by some world leaders as suspect, and where 'alternative facts' – an ingenious rebranding of 'lies and falsehoods' – become more widely disseminated as official accounts of the effects of climate change, of the origins of gun violence in the US context, or of reasonable public health approaches to the COVID-19 pandemic. In this 'post-truth' world, an anthropology of metrics calls for nuance. It does not make the case to end all metrics, but wants to understand them better so that they may actually enrich our lives.

Social sciences of metrology

The anthropology of metrics is situated within a larger social scientific critique of quantification and enumeration. The history and philosophy of science has long attended to the ways that the sciences have aspired to and produce objective representations of world phenomena, situating the development of these practices in particular historical moments and as resulting from a specific trajectory of theoretical thinking. Metrics are part of the effort to create 'objective' representations of the world. Lorraine Daston and others categorise three types of objectivity: mechanical, where objectivity suppresses the 'human propensity to judge and aestheticize'; aperspectival, where objectivity eliminates idiosyncrasies; and ontological, where objectivity brings about a 'fit between theory and the world' (1992: 597). Quantification aspires to all three

forms of objectivity, producing a rule-bound, un-self-interested, true representation of the world.

Quantification is an exemplary practice of the production of objectivity, as it replaces arbitrariness, idiosyncracy, and judgment by explicit rules (Porter 1992: 633). Quantification is thus in part a 'technology of distance', meant to remove all forms of subjectivity. It creates international communities with a common language, and can be used by politicians and institutions to garner the trust of the populations they serve (Porter 1995: ix). The rise of the power of statistics was therefore tied to the rise of the modern nation-state, and by the middle of the nineteenth century in Europe, statistics came to be perceived as the premier means of producing general knowledge for the populace and as a fundamental tool for addressing corruption within the democratic political system (Porter 1995; Merry 2011).

In the rise of the nation-state, statistics were particularly important for producing the concept of population upon which new forms of power could be exerted, as can be seen in Michel Foucault's concept of biopower. This new form of power was based on new forms of thinking about life and disease in the seventeenth and eighteenth centuries. Foucault argues that, at the beginning of the seventeenth century, the power of a sovereign ruler shifted from the simple power to kill someone (the power over death), to aiming at making populations grow (i.e. exerting power over life). Biopower was born, as a form of power that regulates the individual body and populations at large. According to Foucault, it became the main mode of sovereign power: controlling sexuality, economic life, and personal health, for example, often through the use of statistics. As a result, people's subjectivities, or the way that they understand themselves in the world and live their lives, began to change. They started to conceive of their bodies as if they were machines, and began adhering to better eating and exercise habits, for example. New intellectual disciplines, like sociology and epidemiology, contributed to these emerging forms of controlling the body. Better knowledge of life and health were also indispensable for the development of capitalism, as the institutions of power that control health are also those that condition bodies to function in the machinery of production (1978: 141). For example, the 'ideal worker' became a self-disciplined and regulated self, produced and maintained by social scientific and medical texts about the moral value of productivity and the responsibility of the individual to stay healthy.

Within the context of the medical sciences, the growing influence of physicians was key for developing statistical thinking and ideas of what counts as 'normal' and 'pathological'. Opening up corpses, for example, was pivotal for the production of biopower, as it allowed for a direct comparison between bodies, which in turn facilitated the development of statistical averages against which individuals could be compared (Lock & Nguyen 2010). This comparability and the practice of making things commensurate are central to the work that numbers and metrics do, by putting diverse phenomena into the same category in order to start counting. Importantly, that which may seem quite simple, 'like how to name things and how to store data', actually 'constitute much of human interaction and much of what we come to know as natural' (Bowker & Starr 2000: 326). Quantification may be a seemingly natural technology of

classification, yet as Foucault (2001) has shown, the ranking and separating of countries, institutions, and projects through evaluative indicators and data production have specific histories and always reflect more than mere 'common sense'.

In the twentieth century, the power of the nation-state became less centralised and all-encompassing than in Foucault's analysis. Local and international governing agencies increasingly determined people's everyday lives. This changed the role that quantification took in governance. According to Michael Powers, this decentralisation led to an 'audit explosion' (1994) which has been central to contemporary forms of governance since the 1990s. Quantification practices have often themselves become the link between populations and the local, national, or international entities that govern their economic, social, and physical wellbeing. These forms of wellbeing, as well as the accountability of governing organizations to secure them, have become objects to monitor. Practices of accountability – of counting and holding to account – have, for example, become a main mode of instilling trust in institutions which are now are measured against pre-defined quantitative indicators determining their success. This 'governance by numbers' has reached new levels with the United Nation's Sustainable Development Goals (SDG), introduced in 2015, whereby all UN member states are obligated to produce data and monitor their progress across 17 goals and 231 individual indicators (Fukada-Parr & McNeill 2019). Sakiko Fukada-Parr and Desmond McNeill are among the scholars who argue that these indicators 'have distinctive effects on knowledge (how things are conceptualized) and on governance (behaviour of actors, policy choices)' (2019: 6). In this way, the means by which the SDG global development agenda is implemented – through the measurement of 231 individual indicators on such wide policy issues as health, education, poverty, and environment – is at the mercy of group consensus on statistical methodologies for how we measure poverty or ill-health, as well as what kinds of quantified data are actually available. What is measurable becomes what is implementable in our global development agenda and in global public policy.

Contemporary metrics-based modes of defining and determining good governance tend to have their origins in New Public Management (NPM), a school of thought that aims to render administrative structures and processes more business-like (Strathern 2000; Hulme 2007). Under the guise of 'good governance', they are often aimed at increasing economic efficiency. Thereby, they frequently join together 'the financial and the moral' (Strathern 2000: 1), presenting what is financially sound as being morally valuable. Accountability in this way holds its older meanings of responsibility to one's fellow citizens or those under one's care, while also gaining new meanings about promoting efficiency and balancing one's cheque-book. One way of making sense of these developments is to consider them as part of the on-going rise of neoliberalism. In the context of a continued retreat of the state in the neoliberal present, business and finance-based auditing and accountability practices have expanded outward, becoming the means of defining success for medical, educational, and other social services institutions. University rankings incite students to apply to one university rather than another, while key performance indicators increasingly

determine public sector budget allocations. Metrics also drive private investment by ranking corruption levels and the quality of life of entire countries. They even evaluate our day-to-day activities, such as our eating habits and exercising routines (Merry 2011: S84; Rottenburg & Merry 2015), designating each of us as a 'quantified self' accountable to ourselves and our fellow citizens for our individual and group well-being (Moore 2017). In this way, the governing power of the metric – in the context of global shifts of decentralization and the continued retreat of the state's responsibility for our wellbeing – has gained the ability to assert new relationships of responsibility, alongside its ability to measure economic efficiency. Thus, much of our social lives is now assessed by managerial techniques of accountancy and performance management that do not just describe what we do but also assert our activities' moral worth, often with an economistic bent (Shore & Wright 2015).

An anthropology of metrics

Drawing these debates into anthropology, scholars have asked whether the increased use of evaluative metrics has impacted both our societal structures and how we see ourselves. After all, the quality of our sleep or ability to be mindful, and even our societies' levels of happiness, are closely linked to who we are. Since rankings enable comparability and competition between countries, institutions, and individuals, they have come to be a foundational component of how we situate ourselves and others in the world. It may define our individual sense of success where our university sits on ranking systems, or whether our country is 'lower-middle income' or 'upper-middle income'. Further, indicators and evaluative metrics are a language through which we communicate urgency, morality, and our responsibility to one another, invoking or requiring redress or action. For example, the Bill & Melinda Gates Foundation uses its estimations on global health burden to justify its own – non-transparent – investment in global health (Tichenor & Sridhar 2020). On the other hand, the Programme for Action for Cancer Therapy uses the evocative statement that 'One woman dies every 50 seconds' from breast cancer to both advocate for more funding for research and development for treating breast cancer, while also invoking women into action to attend to their own health through screening or genetic testing. In this way, metrics are tools of both the powerful and the resistance, and the viability of metrics is determined by the power structures within which they are produced and amplified.

Anthropologists have tended to study metrics through ethnography. Merry defines this methodology as

> examining the history of the creation of an indicator and its underlying theory, observing expert group meetings and international discussions where the terms of the indicator are debated and defined, interviewing expert statisticians and other experts about the meaning and the process of producing indicators, observing data-collection processes, and examining the ways indicators affect decision making and public perceptions (2011: S85).

There has been a rise in the number of ethnographic analyses of monitoring and evaluation practices in the domains of justice, economy, and health.

A. Metrics in global governance

Take the example of global governance, which is a governing system headed by the United Nations and the member-states, agencies like the World Health Organization, and other international organizations like the Bill & Melinda Gates Foundation. Within the system of global governance, countries are evaluated based on their Gross Domestic Product (GDP) or their Human Development Index (HDI), or the World Bank's newly introduced Human Capital Index (HCI). These evaluations have concrete impacts on what kinds of funding countries can receive from the World Bank or the International Monetary Fund, including the quality of their credit. In global health, countries are ranked based on the quality of their health systems and are provided with funding to fight certain diseases based on their perceived need through a metric known as the Global Burden of Disease (GBD). Yet, the nature of these indicators and the means of their production 'involves a range of discretionary and sometimes arbitrary decisions', despite their assumed objectivity and ability to represent reality (Jerven 2013: 4). There are missing data and questionable assumptions, and the debates about what can be counted and what cannot will remain hidden under the final indicator produced.

Morten Jerven (2013) has shown this by spending extensive time in statistics offices in different countries across Anglophone Africa, interrogating how the assumption that most of the 'least developed countries' are in Africa is based on partial and often inadequate information. Working with very limited resources and limited data, these statistics offices must regularly produce statistics on Gross Domestic Product (GDP) and Gross National Income (GNI). In order to be 'legible' or acceptable, they must reinforce existing assumptions about income levels in-country, assumptions which then help both the international community and government agencies choose where to invest funds in the country.

It is not a trivial matter that GDP is, in this way, created based on existing assumptions that international agencies have about the level of 'development' of a country. As Lorenzo Fioramonti (2014: 15) shows, GDP is founded on the idea that 'that which is not priced, what does not involve formal financial transaction based on money does not count' toward one's country's social or economic wellbeing. GDP has thus given more power to the economy over politics and society. Further, these practices of enumeration and the defining of countries' levels of 'development' or economic prosperity based on metrics have their origins in colonial projects. In the context of the British colonial power in India, 'exoticization and enumeration were complicated strands of a single colonial project' (Appadurai 1993: 315). Here, censes, maps, agrarian surveys, racial studies, and other projects of quantification were a crucial component of the categorization and essentialization of the 'other' under colonial rule. Metrics contributed to creating Orientalism (Said 1978), which was the process by which Western artists, scholars, and government officials exoticised

populations in 'the Orient' – or the Arab world and Asia – through cultural and governmental representations of these populations, and which was a necessary and destructive foundation for colonial rule. Defining a country's 'development' or 'underdevelopment' based on what is quantifiable and carries a price, and using statistical estimates based on pre-existing assumptions about 'development' levels, risks perpetuating the exoticising practices of colonialism. These measurement practices are all the more important as our current geopolitical system is based upon them.

The fact that evaluative metrics often carry with them ideas of financial value that enable the economic valuation of diverse human experiences becomes particularly obvious in development contexts. Gerhard Anders (2008: 187), who has studied the World Bank and the International Monetary Fund's work in Malawi, calls this normative infusion of monitoring and evaluation the 'normativity of numbers'. He shows how loans from both organizations came with conditionalities – that is, particular policy requirements attached to them. Conditional loans were meant to reconcile the organizations' twin goals of respecting country ownership and tackling corruption. They required careful monitoring of particular 'good governance' indicators, such as GDP, inflation rate, and average life expectancy.

B. Metrics in justice and education

Within the domain of justice, it has become obvious that indicators exercise power in a variety of ways. They have, for example, been used to bring claims to individual human rights into closer relation with population-based discourses and management of international development, as economic indicators have increasingly been used for measuring and ranking human rights compliance (Merry 2011: 2016). Thus, economists at the World Bank, who have been pivotal for collecting and collating socioeconomic data throughout the world, have promoted the concept of 'economic rights', such as the right to an adequate standard of living or to social security, as central to the human rights agenda. Their success illustrates the power of certain indicators over others, based on the resources that they open up or close down. With the considerable economic and governing power behind it, the World Bank can prioritise which kinds of indicators it uses to direct its funding, or how much funding individual countries or organizations receive. It has the power to refine human rights indicators to prioritise the economic opportunities of individuals over other aspects of human life. These decisions affect not just what kind of funding countries may receive, but also how they measure human rights issues within their own borders.

Metrics often shape what is prioritised in our justice and education systems, but anthropologists have also shown that they must be understood in the context of other forms of evidence. Thus, qualitative narratives or other forms of evidence are part and parcel of numeric indicators themselves. Take the example of popular media rankings of quality for law schools. They impact the day-to-day occurrences within those schools by producing narratives that are just as important as the numbers themselves (Espeland 2015). When rankings are reorganised and some law schools are suddenly put 'below' others that law students

and faculty had previously believed themselves to be superior to, they may provide narratives that try to temper and explain away the new hierarchy. For example, a law school dean may provide a narrative to his students about the ways that the rankings themselves were produced and the fact that they could be impacted, and changed quickly, by limiting class sizes the next year. In this way, rankings create narratives that 'speak back' to the numbers. Other examples also show that indicators are not simple and straightforward facts, but that they require qualitative interpretation, a perspective that some South African prosecutors studied by Muegler (2015) have taken. Thus 'performance measurement systems' measuring the 'accountability' of the justice system to the country's population in South Africa must be analysed through how indicators and measurement are used in legal cases. The prosecutors' 'stat talk' was always situated in larger understandings of practices of accountability, showing how indicators always must be understood in their larger context.

C. Metrics in health

The anthropology of metrics has traditionally had a strong focus on health. This is linked to the history of colonialism, where measurements of the body, of health, and of illness have been particularly pernicious in producing and maintaining oppressive theories of othering and racism (Arnold 1993; Anderson 2005). This history highlights how important it is that anthropologists continue to analyse the assumptions at the heart of health metrics. Further, techniques of measuring the body or sub-elements of the body have come to stand in for determining health in general, in ways that shape the lived experience of individuals as well as the institutions with which they interact.

In *The mismeasure of man*, evolutionary biologist Steven Jay Gould (1996) explains how complex human intelligence was systematically reduced to what could be measured with crude tools, such as IQ tests and skull size gauges, and how such unsuitable proxies were used to justify existing social hierarchies. The use of metrics of bodily weight and size to measure individuals' health echoes this history (Yates-Doerr 2013). For example, obesity has come to be measured through various techniques including waist circumference, body mass index, and bioimpedance analysis. As part of this trend, 'the public health community has become swept up with the idea that measurements can reveal the interior health of the body' (Yates-Doerr 2013: 50). A major goal in public health is to find the best tool to provide a quantified value for body fat. In the process of finding more and more 'accurate' tools to do so, public health officials and clinicians easily forget the 'representational quality of numbers' and allow them to stand in for the concept of health itself. This standardised and metrics-based understanding of health stands in contrast to alternate ways of conceiving of fatness. In Guatemala, for example, where one individual's corporeality is not necessarily commensurate with another's, fatness and illness are not considered to be intrinsically linked as they so often are in the public health literature. Here, experiences and attitudes about fatness connote abundance and joy rather than illness or poor health. While numerical representations are not inherently bad, the power of numbers means that 'other knowledges about bodies become harder to see, and though they

certainly do not disappear, they become more difficult for scientists and public health worker to value' (Yates-Doerr 2013: 64).

Metrics tend to impact those who use them, down to the level of their innermost subjectivity. Enumerative practices around the surveillance and prevention of HIV/AIDS in Miami, Florida, for example, have helped shape the identities – or 'numerical subjectivities' – of those living with the disease (Sangaramoorthy 2012: 292). Here, HIV/AIDS patients come to define themselves and how they understand wellness through their viral loads, or the number of viruses within a given amount of bodily fluid. They also define themselves through their CD4 counts, or the number of CD4+ T cells in a given amount of fluid, measuring individuals' immunity levels. They tie changes in such numbers explicitly to external phenomena, arguing they might change for the better if a favourable health policy was passed. At the same time, statistics co-create how people see the world around them. Thus, the Center for Disease Control uses gathered surveillance data on Haitians living in Miami, classifying them as a 'high risk' population that requires extra HIV/AIDS surveillance. This is a legacy of the incorrect assumption that the presence of the disease in the US originated from Haiti (Farmer 1992), and Thurka Sangaramoorthy shows how Haitian-Miamians' contemporary risk level is based on national statistical estimates on the disease. Previously-held assumptions about these populations being 'high-risk heterosexual' populations have made them particularly targeted for surveillance, and as a result of these categorizations, Haitians living with HIV/AIDS in Miami have internalised this externally imposed risk. In opposition to non-Haitians understanding their HIV/AIDS experience through 'numerical subjectivity', Haitians living with HIV/AIDS in Miami have been placed in a category of 'high risk' by outside forces – a category maintained through statistical surveillance – that has led them to reject these same practices of self-enumeration because of these legacies of discrimination. In this way, categorizations maintained by metrics are imposed externally, but there is always space for rejecting or manipulating them on the level of the individual.

Since global health metrics are powerful tools, they are always a tangle of contentions over epistemological definitions of disease, competition over limited funding from international organizations, and techniques of calculating and modelling proxies for disease. This has been shown in the example of maternal health in Malawi (Wendland 2016). Here, the officially-stated national progress on maternal health, based on a maternal mortality ratio (MMR), stood in painful disconnect to the experiences of physicians at the Queen Elizabeth Central Hospital in Blantyre. The MMR had been estimated in 2010 by the Seattle-based Institute for Health Metrics and Evaluation (IHME), which projected success in the country's goals for maternal mortality. Yet local physicians observed the same frequency of funeral processions in the maternity wing of the hospital. An analysis of the way that IHME and the World Health Organization produce MMR estimates shows that the metric, in places where maternal mortality data collection is sparse, like Malawi, is, in fact, an estimation of estimations, which in this instance failed to capture reality and risked losing funding for maternal health programmes. At the same time, epidemiologists, statisticians, and demographers have

been developing and advocating for better metrics to measure progress in maternal health, asserting that their current forms do not appropriately represent reality (Storeng & Béhague 2017). However, it may be that at the heart of this effort is not so much a desire to represent the world, but one to 'sell' maternal health as a priority over other health issues to global health donors. It may well be that health metrics are themselves marketing techniques in a world governed by indicators.

In a world where metrics proliferate but health inequalities persist, one may go so far as to ask whether metrics create value only for a select few (Erikson 2016: 148). Not only are numbers required to give value to past action, but they are also asked to produce 'future actuarial worth'. Promoters of health interventions among the global health community in Seattle, or Washington D.C, for example, often package their work for investors by providing productions of 'expected growth' due to their interventions, providing them a return on their investment (Erikson 2016: 153). Metrics have evolved from being strictly an accountability tool to one to be used to attract and incentivise investment, which we can see in the example of the shift in how the Bill & Melinda Gates Foundation (BMGF) has approached the use of metrics. '"Tools of business' will be the solution to bringing health and welfare to the world', Bill Gates stated in his 2013 Annual Letter, showing how BMGF has fully embraced the use of metrics to govern global health like a business. These 'incentivizing financial tools' have been proliferating at a clip, using modelled and forecasted metrics as a means to show investors which medical commodities are the important ones to support.

One particularly elaborate incentivising financial tool of this sort is the World Bank's Pandemic Emergency Financing Facility (PEF), which promised large interest rates to investors in the absence of a major pandemic within a three-year window (Erikson 2015; Stein & Sridhar 2017). Using medical expertise as well as that of multinational insurance companies, the PEF's dispersal of funds for the support of lower- and middle-income country governments and global health agencies is determined by a series of metrics that some have argued are ill-fitting for many potential pandemics (Jonas 2019). This raises the question of whether metrics can be used to incentivise inaction, rather than action in global health. During the COVID-19 pandemic, the PEF was only triggered in late April 2020, when other non-metrics-based funding mechanisms had already been allocated. In addition to fostering inertia, and slowing down the disbursement of aid, metrics like those required by the PEF turn health itself into an object of investment for which actors obtain a financial return (Erikson 2016). This shifts the fundamental measure of success for health interventions from addressing health problems to whether an investor makes a profit, further deteriorating the concept of health as a public good.

Conclusions

This entry has focused on the anthropology *of* metrics, which analyses the effects of the increasing quantification of our institutions, communities, and selves. However, anthropology's engagement with

metrics as an object of study exists alongside the use of indices, indicators, and statistics for research. Anthropologists make use of or even help produce population-based statistics to provide context for ethnographic studies. At the same time, the UK's Research Excellence Framework requires that anthropology departments produce performance indicators of the impact of their research, turning its members into both producers and researchers of metrics. Anthropologists sometimes assert that their research output is 'a form of counterevidence to metrics', which produces a tension between 'stories and numbers' (Moats 2016: 596). They will need to bridge the chasm between qualitative and quantitative ways of representing the world, which exist alongside and in tension with each other (Benton 2012). Rather than arguing against metrics, which is a dangerous thing to do in our 'post-truth' world, anthropologists may want to argue for better metrics and the simultaneous use of multiple modes of evidence. Analysing the practices that create metrics, and interrogating their effects, does not stand in for an argument against their use. Instead, it indicates the importance of couching metrics and quantified data within other forms of evidence, in a way that ensures that the assumptions, data sources, and estimations that were used to create them remain clear.

We may today be reaching a point at which the production and consumption of evaluative metrics has reached its peak (Kelly & McGoey 2018). At the same time, our trust in the systems that produce and consume them is at a historic low. In a time where nuance seems to be mostly absent from political debate, debating the validity of metrics feels like a dangerous game. And yet, those who design and implement metrics, and those whose lives are impacted by them, must understand how the dominant categories and measurements affect social life. Based on this understanding, they may be able to decide where measurement is needed and where unmeasured life should continue.

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[1] In anthropology, 'subjectivity' is used to mean many things, including personhood, the 'emotional life of a political subject' (Luhrmann 2006: 345), and the processes by which a 'modern subject' is made (Biehl, Good & Kleinman 2007: 1). The concept is used to interrogate the ways by which individuals understand themselves and how this is influenced by social processes and conditions around them.

[2] Along with other feminist anthropologists of science, Donna Haraway has argued that the objectivity touted by natural scientists over the centuries is not a 'view from nowhere'. She holds that evidence, research designs, and theories have historically been produced from a Western, masculine perspective, and that all production of knowledge must be thus understood to be 'situated' (Haraway 1988: 575). Social anthropologists, particularly since the field's representational turn in the 1980s, have tended to assert the importance of acknowledging the positionality of the ethnographer in the knowledge they produce about different communities.