Decolonial perspectives on global higher education: Disassembling data infrastructures, reassembling the field

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ABSTRACT

The expansion of university systems across the planet over the last fifty years has led to the emergence of a new policy assemblage – ‘global higher education’ that depends on the collection, curation and representation of quantitative data. In this paper I explore the use of data by higher education policy actors to sustain ‘epistemic coloniality’. Building on a rich genealogy of anticolonial, postcolonial and feminist scholarship, I show how decolonial theory can be used to critique dominant global higher education imaginaries and the data infrastructures they depend on. Tracing the history of these infrastructures, I begin with OECD’s creation of decontextualised educational ‘indicators’. I go on to track the policy impact of global university league tables owned by commercial organisations. They assemble and commensurate institutional data into rankings that become taken-for-granted ‘global’ policy knowledge. I end by exploring the policy challenge of building alternative socio-technical infrastructures, and finding new ways to value higher education.

KEYWORDS

Epistemic coloniality; infrastructure; decolonial theory; data

Introduction

When the Catholic apologist John Henry Newman wrote his influential ‘Idea of the University’ in 1852, his key claim was that ‘a university by its very name professes to teach universal knowledge’ (1852 [1996], p. 19). One hundred and seventy years later, and still espousing a commitment to the ‘universality’ of knowledge, Northern European university models have become globally hegemonic. This paper offers a decolonial reading of university globalisation by tracing the development of the data infrastructures that underpin this unipolar universalism, and their use in helping to create ‘global higher education’ as a policy and knowledge assemblage.

Knowledge is always an assemblage of disparate elements – human, material and symbolic. The assemblage that is ‘global higher education’ is partly dependent on the collection, curation and processing of statistical data by powerful knowledge brokers. These include the metrics and indicators produced by government agencies, the OECD, university rankings (such as Times Higher Education) and ‘data analytics’ companies (such as Elsevier). Universities and a range of other policy actors use this data to construct and stabilise ‘global higher education’ as an object of policy knowledge and action.
My choice of the term ‘infrastructure’ is deliberate. It invokes a tradition within Science and Technology Studies that conceptualises infrastructures as ‘relations’ rather than ‘things’, and emphasises the practical work of developing, deploying and using them (Edwards et al., 2009, 2013; Star, 1999). Infrastructures, in this way of thinking, work across a range of scales and spaces, and enable the coordination of activities across different socio-material worlds and technological arrangements (Karasti et al., 2016). The term succinctly captures the role of the citation and ranking infrastructures in synthesising and combining a diverse range of institutional data from across the world. The role of these dominant data infrastructures in underpinning a ‘colonial matrix of power’ (Mignolo, 2000) is the subject of this paper.

The paper begins by reviewing the rich traditions of anticolonial, postcolonial and decolonial critiques of higher education, before arguing that ‘epistemic coloniality’ continues to dominate global research systems. The model of the research university first emerged in 18th Century Germany. It subsequently spread to America and then across European ‘empires of scholars’ through colonial collaborations and academic mobility (Pietsch, 2013). Kamola shows how this model is sustained in the contemporary ‘education’ global imaginary’, and the way it reinforces colonial hierarchies, as well as building new planetary connections and flows (Kamola, 2019). Data infrastructures are often taken for granted, but their emergent architecture and use to generate powerful global imaginaries is at the heart of my argument. The paper traces the history of data collection by US and colonial higher education systems, and the rivalry between UNESCO and the OECD. With more funding and a clearer policy mandate, the OECD cemented its dominance by creating commensurable higher education ‘indicators’. The paper goes on to describe the emergence of global university rankings, such as those owned by Times Higher Education and QS. Both rely on a range of data sources, including that provided by universities themselves. Their use of citation data reinforces the influence of Scopus, owned by Elsevier, and Web of Science, owned by Clarivate, the two most powerful and influential of the scholarly citation indexes.

The easy ‘globalisability’ of education indicators such as citation ‘impact’ factors and rankings gives them discursive and policy power. The data produced by these infrastructures gets scrutinised and acted on by universities, governments and students. They lead universities to ‘see’ globalisation as both an organising principle and a competitive marketplace (Kamola, 2019). It also incentivises them to actively reimagine and ‘reworld’ the planet in their own image. The policies that result flatten and homogenise institutional forms and knowledge systems. Knowledge practices – including community and indigenous knowledges – that don’t fit within dominant scientific paradigms are excluded. The paper ends with examples of alternative socio-technical infrastructures that might help generate more diverse maps of knowledge, so helping to decolonise higher education. The challenge is to move from unipolar universality to a more pluriversal research and knowledge ecosystem.

**Anticolonial, postcolonial and decolonial critiques of higher education**

In 1911, the Ghanaian journalist and pan-African intellectual J. E. Casely Hayford wrote a novel called Ethiopia Unbound. Its protagonist Kwamakra has been educated at Mfantsipim, a fictive Ghanaian University, and he espouses a theory of education based
on establishment of ‘fully national’ universities throughout Africa, teaching African languages. Inspired by the campaigning of the pan-African intellectual Joseph Blyden for a West African university in Sierra Leone, Casely Hayford inspired a generation of pan-African activists committed to Africa’s universities, as well as developing anticolonial critiques of colonial higher education. One example is ‘Renascent Africa’ (1937), the call by the Nigerian nationalist leader Nnamdi Azikiwe for universities for emerging African generations.

Fifty years later, Kwame Nkrumah, leader of Ghana’s independence movement, was at the forefront of these theoretical debates. He was scathing of the late-imperial cultural project of ‘transplanting’ a British academic ethos and Edwardian university ‘blueprint’, and the assumption that ‘a university system appropriate for Europeans brought up in London and Manchester and Hull was also appropriate for Africans brought up in Lagos and Kumasi and Kampala’ (Ashby, 1964, p. 45). Inspired by his own involvement in anticolonial activism (Young, 2002) and his own experience of studying at a historically black college in the US, Nkrumah insisted that a ‘university must relate its activity to the needs of the society in which it exists . . . taking root amidst African traditions and cultures’ (Nkrumah, cited in Ashby, 1964, p. 68). Once president, Nkrumah began to champion the ‘Africanisation’ of the university (Akurang-Parry, 2007).

Nkrumah and Azikiwe were just two of many Pan-African intellectuals who called for Africa’s universities to foster an African-centred geopolitical imaginary (Sharp, 2019). Young (2002, p. 2) defines anticolonialism as a ‘diasporic production, a revolutionary mixture of the indigenous and the cosmopolitan, a complex constellation of situated local knowledges combined with radical universal political principles’. Some were inspired by Marx, others by Fanon. Walter Rodney, the author of How Europe Underdeveloped Africa called for a ‘decolonised African social sciences’ (1972), whilst Samir Amin argued for a relative delinking of African economies from the world economy. The philosopher Paulin Hountondji critiqued the ‘scientific extroversion’ (1990) that led African researchers to prioritise the theoretical needs of the Western academy rather than their own societies. In their different ways, these critics worked to ‘provincialise’ Europe and the dominance of European knowledge forms, anticipating more recent work on the ‘epistemic coloniality’ of academic knowledge (Mbembe, 2016).

Twenty years of World Bank and IMF ‘structural adjustment’ policies fundamentally undermined Africa’s optimistic ‘university age’ (Livsey, 2017) and its intellectual cultures. The rise of postcolonial theory revitalised these anticolonial critiques, returning attention to the epistemic power of western knowledge paradigms. Edward Said’s (1979) work on ‘orientalism’, drawing on Foucault, was particularly influential, as was the work of Spivak, Bhabha, Young. Mudimbe questioned the exoticisation of Africa by successive western ‘inventions’ and imaginaries (1988). Equally important – if often overlooked – was the work of border feminists such as Lugones, Anzaldua, and Hooks. Young (2002, p. 2) saw postcolonialism as a reconsideration of how colonialism’s history ‘determines the configurations and power structures of the present, to the extent that much of the world still lives in the violent disruption of its wake’. Young notes how anti-colonial liberation movements continue to inspire contemporary political movements.

Since 2000, these critical anti-colonial traditions have once again been reinvigorated by a Latin American school of ‘decolonial’ scholars, including Grosfoguel, Quijano, Escobar, Walsh, Mignolo and Santos. Their work combines the materiality of world-systems
critiques with a postcolonial attention to epistemology, critiquing the dominance of Western scientific knowledge Mignolo (2011). Santos’ theorisations of the ‘sociology of absences’ have been particularly influential. His focus is on the metropolitan and colonial ‘abyssal line’ that gets created between legitimate and illegitimate knowledges, as some forms of knowing are suppressed for being inconsistent with the scientific canon. He locates epistemology at the heart of justice; with social justice being tied to cognitive justice (Santos, 2014). He is also attentive to the financial crisis facing universities, arguing it provides ‘an ideal excuse to bring about the university’s adjustment and submission to the increasing demands of global capitalism’ (Santos, 2010, p. 220). Santos suggests that the struggle against the ‘capitalist university’ is the other side of the struggle against the colonial university, as the two modes of domination work in tandem. These ideas have been taken further by African scholars of the decolonial, including Mbembe (2016) and Sarr (2016, 2022).

The decolonial ‘turn’ has reinvigorated interest in alternative histories of, and visions for, higher education. But academic genealogies are also moves to power. Puwar (2020) highlights her discomfort and sense of ‘deja-vu’ as male decolonial theorists take ‘centre-stage’ in speaking for the Global South, sometimes ignoring or effacing earlier work. She asks why Santos positions himself as an ‘oppositional postcolonial’ theorist, and instead calls for theorists to acknowledge this rich weft of earlier anticolonial and postcolonial dialogues. Cusicanqui (2012, p. 9) argues that academic scholars of decoloniality, usually based in the Global North, ‘appropriate the language and ideas of indigenous scholars without grappling with the relations of force that define their relationships to them, thus decontextualizing and depoliticizing these concepts and marginalizing indigenous scholars from their own debates’. In essence, she feels they are reproducing academic coloniality in their research practices.

Decolonial analyses of the abyssal divides of ‘global’ higher education imaginaries have to start by acknowledging this rich genealogy of critique. Young argues that anti-colonial and postcolonial activism, and its ‘decentred network’ and ‘dynamic counter-modernity’, was constructed in order to fight global imperialism, demonstrating that ‘globalisation does not necessarily involve irresistible globalisation’ (2002, p. 2). For Haraway, globalisation is ‘the material-semiotic’ production of some forms of life rather than others’ (2000, p. 137). For Tsing, the charisma attached to globalisation in those early years is comparable in many ways to the appeal of the modernisation discourse in the post-war period (Tsing, 2005). Decrying uncritical ‘globalism’, she seeks to understand the work that ‘projects of globalisation do in the world’ (Tsing, 2005). Others argue that ‘highly selective spatially encapsulated forms of global connection’ were accompanied with ‘widespread disconnection and exclusion’, creating global ‘shadows’ (Ferguson, 2006, p. 14). Connell cleaves to a more materialist reading of globalisation, seeing it as complicit with market ideology, managerial takeover, and a neoliberal ‘imperial economy of knowledge’. But she too recognises that it is both material and representational, arguing that ‘globalization is partly an illusion, partly a cultural hangover from the old empires, and partly an economic strategy’ (Connell, 2019, p. 85).

Much decolonial theory operates at a conceptual and normative level. It has been the task of social scientists to understand how epistemic regimes are implemented within institutional practices and social worlds. Amongst scholars of global higher education, Shahjahan has gone furthest in developing a critique of the ‘colonial
geopolitics of knowledge production’, by focusing on the ‘epistemic objects’ created by the World Bank and the OECD. Arguing that ‘data have become a key governance tool in global HE worlds’ (Shahjahan, 2016, p. 699), Shahjahan goes on to explore the influence of ‘policy reports, performance indicators, and technical assistance’. This paper builds on Shahjahan’s approach, with a critical attention to the data infrastructures that enable these epistemic objects. As Gray notes in his critique of the global academic publishing industry, infrastructures are never neutral, but instead ‘shapes who and what is assembled around research, as well as what is attended to’ (Gray, 2020, p. 251).

Despite a century of anti-colonial organising, postcolonial theorising and decolonial activism, Euro-American ways of organising and classifying knowledge continue to define the work of African universities. Citation data is just the latest of many external framings of African academic knowledge. For Mamdani, ‘African universities are still a colonial project’ (2018, p. 9). Across Africa, critiques of Eurocentrism and the ‘imperial hierarchies of knowledge’ (Arowosegbe, 2016) are increasingly heard. Scholars of doctoral education (Ndofirepi & Maringe, 2017, 53) argue that Africa should not ‘simply reproduce the knowledge required elsewhere, especially in the global north’ (2017, p. 53). For Ndlovu-Gatsheni (2013) what is needed is the destruction of ‘foreign’ institutions, and the creation of decolonial ‘higher education that does not lead to alienation of African people from their societies and communities’ (2013, p. 180). Yet despite these voices, university leaders and higher education policy makers across the continent make policy decisions based on the knowledge generated by ‘Northern’ data infrastructures. This paper offers a history of these infrastructures and their growing influence.

**From statistics to indicators: the emergence of the data infrastructures on global higher education**

Universities have long kept careful records of their students and examination processes. The accounting profession traces its origins to the auditing practices of medieval universities (Hoskin & Mace, 1986). The history of British colonial universities and their academic mobilities is traced in their institutional submissions to the Imperial Bureau of Universities (Pietsch, 2013). Yet to develop a detailed picture of the international composition of the first generations of British PhD students, Simpson compiled data from more than 9,000 individual student records (Simpson, 2009).

The US was one of the first countries to collect, aggregate and publish national-level data on its international students. Set up in 1919 to promote peace through educational exchange, IEE (International Educational Exchange) became a tool of US educational soft-power, administering education scholarships and surveying international students at US institutions. More broadly, post-war attempts at creating an international picture of higher education were fragmented and contradictory. International data on higher education relies on universities collecting, curating and sharing institutional data with government agencies. Many non-OECD states still struggle to assemble comprehensive national-level data. Guadalupe (2022) analyses UNESCO UIS (Institute for Statistics) data to highlight the low percentages of countries in Latin America, Africa and Asia that hold annual statistical data on enrolment, graduation and international mobility.
Histories of the OECD highlight its rivalry with UNESCO. The OECD compiles data from 38 advanced economies, whilst UNESCO covers more than 190 UN-recognised states. UNESCO published a *World Survey of Education* from 1955 to 1971, identifying important global trends. These were replaced by *World Education Reports*, focusing on specific educational topics. Whilst detailed, they often lacked strong policy recommendations, as strategy was the responsibility of the UNESCO General Conference (Spaulding & Chaudhuri, 1999). UNESCO faced consistent problems with the timeliness and comparability of national data, and the different ways nation-states classified international students. Data inconsistencies and publishing delays continue to limit the utility of UNESCO data (NousGroup, 2019).

The OECD, founded in 1961 with a mission to promote trade, also began to produce educational data. Initially replicating the work of UNESCO (Ydesen & Grek, 2020), it came under US pressure to develop comparable measures of international ‘learning outcomes’ in the 1980s (Addey, 2021). Over time it defined its mandate as the measurement of the economic outputs of education, and pushed for reform of universities (Bürgi, 2017; Kallo, 2020). As Addey notes (Addey, 2021, p. 596), ‘for the OECD to pursue this global learning measurement agenda, space had to be made in the area where UNESCO had previously been fixing and spreading what learning means and counts’. The OECD’s statistical legitimacy led UNESCO to launch a new Institute for Statistics.

An increasingly influential policy think tank, OECD began publishing its yearly *Education at a Glance* (EAG) handbook in 1992. Despite its title, successive issues have become increasingly voluminous. They have become a ‘go-to’ resource for educational policymakers, partly because their key educational indicators combined different data sources and have been specifically designed for policy utility. Gorur (2015) highlights the mobilisation of a ‘machinery of expertise’ that went into creating these volumes during the 1990s, with key individuals within the organisation promoting the idea that one could produce ‘purposefully processed’ indicators for policy purposes (Bottani, 1994; Bottani & Tuijnman, 1994). She also describes the tensions between the ‘numbers people’ and policy makers over the deployment of indicators. Gorur describes the intense logistical work involved in producing education indicators that could be used comparatively and predictively, with details about a whole range of parameters, and leads her to argue that ‘production precedes description’, with a complex world of data needing to be classified, manipulated and selected. For Adelmann, indicators ‘reconcile vastly different systems of accounting, cultural definitions, traditional national references points, idiosyncrasies of institutions and nuances of behaviour (Adelman, 2009, p. 36). Gorur argues that this process is one of ‘producing calculable worlds’, stabilising and reifying causal associations and promoting particular ideological agendas (Gorur, 2015). Gorur emphasises calculations rather than the geographies, but this datafication (Williamson et al., 2020) also enabled policy actors – including universities themselves – to create whole new global imaginaries (Kamola, 2014; Kenway & Fahey, 2009). Grek (2020) argues that these trends of quantification and standardisation represents the dominant influence of the transnational field of measurement on global education.

Responding to the growth in mobility through the 1990s, *Education at a Glance* first included data on international student mobility in 2002. Since then, the OECD yearbooks have tracked the sustained growth in international student mobility, from an estimated 2 million students in 1998 to 5.6 million in 2018. Focusing on mobility from and to OECD
countries, its visualisations and graphs mostly exclude non-OECD countries. Scholars acknowledge its growing influence (Bürgi, 2017; Ydesen & Grek, 2020), whilst pointing to the power of its indicators (Auld et al., 2019; Robertson, 2017), its policy framings (Sorensen et al., 2021; Vaccari & Gardinier, 2019), its epistemic culture (Kallo, 2021) and its prescriptions (Shahjahan, 2016). The OECD is an economic think tank with a political agenda (promoting the economies of the OECD), not an academic institution (Vickers, 2020), but higher education researchers have drawn heavily upon, as well as critiqued, its ‘datafication’ of global higher education.

Ladislav Cerych, a prescient Czech policy thinker, used his OECD experience to write *A global approach to higher education* in 1972. In his contribution to *Perspectives on Higher Education* (Clark, 1984), Cerych was the first to refer explicitly to a ‘global’ HE system (Cerych, 1984), the pressures on universities to converge, and the changing nature of European higher education to promote European initiatives (Cerych, 1985). But he wrote relatively little about globalisation as a social dynamic. Apart from Cerych’s work, the concept of ‘global higher education’ did not enter the scholarly lexicon until the 1990s. There was very little ‘global’ data from which to visualise this new policy-knowledge assemblage. The research focus was either on comparative cross-national analyses, or the policy challenges of ‘internationalising’ higher education. These fields developed distinctive identities. Knight and de Wit (1997) defined globalisation as the ‘flow of technology, economy, knowledge, people values, ideas ... across borders’, whereas they saw the ‘internationalisation of higher education’ as the way ‘a country responds to the impact of globalisation’. Whilst some treat these as overlapping fields (Altbach, 2009; Lee & Stensaker, 2021), this paper focuses on the data infrastructures that enabled the emergence of ‘global higher education’ as a specific knowledge and policy assemblage.

Alongside OECD indicators and student mobility data, national policy priorities helped stabilise ‘global higher education’ as an object of policy knowledge during the 1990s. An example is a 1998 seminar hosted by the US Institute of International Education entitled ‘New Perspectives on Global Higher Education Challenges’. Invitees included US policy makers, the Open Society, World Bank and international university vice-chancellors. Yet despite ‘considerable convergence’, the convenors felt that it was ‘not yet possible to think of Higher Education as a global system’ (Altbach, P., & Davies, T. 1999).

The exponential growth in computational power across the 1990s allowed policy makers to aggregate global student mobility and research data, whilst digital networks facilitated the process of distributing knowledge. Both combined to accelerate higher education’s ‘globalisability’ (Butt, 2015). Aided by the production, aggregation and representation of statistical data, ‘global higher education’ could now be made visible as a knowledge and policy assemblage.

If scholars were slow to imagine a global university system, policy makers were less reticent. Monash adopted the ‘Global Monash’ moniker in the late 1990s as it set up branch campuses across the Asian region (McBurnie, 2000). Suddenly universities were global actors, not just responding to globalisation. They were also producing, and selectively sharing, ever more data about themselves, as they competed for influence and students. The creation of global university rankings in the early 2000s took this rivalry – and the data it relied on – to a new level.
Rankings: the commercial visualisation of global higher education

University rankings have a long history. The US News and World Report has been producing domestic rankings since the 1990s, and the first comparison of US graduate schools was published in 1925 (Bogue & Saunders, 1992). Yet the 2003 publication of the Academic Ranking of World Universities (ARWU) by Shanghai Jiao-Tong university created a new institutional imaginary for global higher education. A single global ranking of universities, based on a set of meta-metrics – including research citations and the number of Nobel prize winners – offered a powerful way to visualise the relationships between elite universities across the globe. The ARWU rankings were quickly supplemented by commercially-owned global league tables (including those produced by Times Higher Education and QS) as well as university-led alternatives (such as MultiRank). These rankings became an index to globalisation, reinforcing the perception of an elite cadre of ‘global’ universities (Hazelkorn, 2015). ARWU promised not only a ‘global’ picture but also provided evidence of the tilting of the research world towards Asia-Pacific.

Over several iterations, the aggregation of different metrics to create an institutional ranking of the top global universities (Robertson & Olds, 2017) produced a powerful ‘calculable world’ (Gorur, 2015). The data it generated were increasingly commercially valuable. On the back of their rankings, Times Higher Education and QS sold strategic advice and consultancy services to universities. These rankings enabled policy makers to visualise a global system of ‘world class’ universities, and reinforced the influence and power of the citation indexes on which they drew. Together, these data infrastructures reinforce an attention to the flows of knowledge, mobility and collaboration between relatively few globally elite universities.

Universities have not just been willing accomplices but active cheerleaders of higher education’s globalisation, fostering cross-border partnerships and student mobility, participating in the rankings game, and marketising their activities. Some institutions were more willing to provide data to the rankings agencies than to national governments, recognising the legitimation rankings provided. Data on proportions of international students (and staff) are used to generate these rankings, and so it was in the interests of universities to supply this information (Robertson & Olds, 2017).

Internet access meant that data that was once the preserve of comparative education was now open to potential students keen to compare universities and make informed choices. Rankings are now synonymous with quality, again signalling the power of indicators to reshape. As Hazelkorn and others have noted, these companies have created huge databases of university activities that they are now able to draw upon in providing chargeable services back to institutions keen to improve their rankings (Hazelkorn, 2015). Whilst a few academic organisations – such as CWTS at Leiden – have developed alternative rankings, Times Higher Education and QS continue to dominate, offering ever more products.

Higher education scholars have critiqued the profoundly deleterious impact of such rankings, and their flattening of a multipolar global field. The consequences include ‘normalised market competition between research universities and countries, stratifying it on the basis of the template of the American multiversity, and summarising the complex...
activities of multiversities with a handful of ordinal numbers’ (Marginson, 2016, p. 7). Their importance to policy makers, universities and students justifies their study by researchers, but also reinforces this influence.

The visuals – and the computational power they rely on – are a key aesthetic appeal of global rankings. Like maps of research collaboration, academic mobility or international student flows, visualisations enable a global imaginary (D'Ignazio & Klein, 2020). Through these activities, Marginson argues, ‘every university can (momentarily) imagine itself as Harvard’ (Marginson, 2013, p. 2). Boehnert (2016) develops an important critique of ‘digital positivism’ in relation to international data, acknowledging how power relations, special interests and ideologies determine which data is collected and how it is used. Like others working within data feminism, Boehnert calls for critical approaches to information visualisation that rejects reductive methods, and for acknowledging complexity, context and the political. She poses important challenges for researchers of global higher education.

**Citation indexes: knowledge inclusion, knowledge exclusion**

Two commercially-owned data infrastructures now define the research priorities of universities across the world: the citation indexes owned by Elsevier (Scopus) and Clarivate (Web of Science). With an increasingly diverse set of publishing options open to researchers, the dominant citation indexes are used by universities to signpost ‘reputable’ journals.

Eugene Garfield was an entrepreneurial US data scientist who, studying for a PhD in the 1950s, found himself trying to make sense of, and keep up with, the growth of scientific publications in the life sciences. He came up with a technique of assessing an article’s importance and impact by the number of citations it received (Garfield, 1955). His idea was for a citation index, a database of citations between publications, that allowed the user to easily establish which later documents cite which earlier documents. Suddenly scientists could measure the influence of their work, and universities were able to track productivity. In an era when Merton sought to emphasise the power of disciplinary ‘norms’ in shaping scientific collectivism (Merton, 1973), Garfield had created a powerful way for academics to compete. Around the same time the historian of science Solla Price plotted the exponential increase in the number of journals, estimating that they would increase by a factor of 10 every 50 years (Price, 1961) and forecasting a situation where there would eventually be more than 100,000 journals. Together their work opened up the field of scientometrics, dedicated to measuring and tracking the circulation and citation of scholarly knowledge. The expansion of scientific knowledge continues, and the number of papers listed in Scopus jumped from 1 million in 2000 to 2.5 million in 2018, a 5% annual increase (Marginson, 2018). Whilst English is the first language of only 5% of the world, more than 95% of articles included in Clarivate’s Web of Science are published in English.

The potential offered by bibliometric data for research was transformed by the growth in computing power during the 1990s. Suddenly international collaborations could be tracked and visualised, and the volume and size of the global science system could be measured. Scientometric data track the constant growth in global research collaborations, even as scholars recognise the skewed nature of their coverage, with a paucity of non-English language publications, and a disproportionately small number of journals from Africa, Latin America and Asia.
Like many scholarly journals, the process of consolidation has seen these citation indexes purchased by the major publishing conglomerates and data analysis companies Chen, Posada and Chan (2019). The two main commercial subscription-based citation indexes are Scopus, owned by Elsevier and Web of Science (WoS), owned by Clarivate. Scopus now includes the Latin American SciELO citation index. The influence of these indexes was dramatically increased by their use in rival world university rankings, with WoS data contributing 20% of the ranking weighting used by ARWU, and Scopus being used by Times Higher Education. Many universities keen to improve their global rankings expect their academics to publish in ‘top-quartile’ journals. This raises the profile of the indexes, and their open availability and ease of use makes them valuable research tools. It also makes the indexes more influential and valuable. Researchers too found themselves dependent on data infrastructures owned and controlled by powerful international, state, and commercial actors.

Elsevier, as one of the largest academic publishers (Johnson et al., 2018), owns a range of commercial products, including bibliographic software for keeping track of references, journal publishing software, citation indexes, and tools for measuring publishing ‘outputs’ and ‘impacts’ – in short, the whole scholarly infrastructure (Posada & Chen, 2018). At every stage of research, academics have become increasingly reliant on the tools of what Larivière et al. (2015) call a ‘publishing oligopoly’. In 2020, Elsevier posted a $939 million profit on a revenue of $3.5 billion.

University league tables, research rankings, citation metrics and journal hierarchies come together to sustain what Marginson calls a ‘new standard of value’ (Marginson, 2010), but also to strengthen the existing political economy. Research universities are increasingly driven by commercial imperatives and the search for symbolic status, but open-source knowledge also plays a valuable, and potentially disruptive role (Shin & Kehm, 2012).

There is an inherent tension between technocratic expertise and democratic principles when generating educational data (Fontdevila & Grek, 2020). Whilst the ‘antagonistic interdependencies’ between different forms of knowledge can be generative (Burawoy, 2005), metrics and indicators bypass these dialogues. Scholars of global higher education have had little choice but to make use of these data infrastructures, even as they critique its limitations, occlusions and epistemic injustices.

Reassemblage? Towards decolonial knowledge infrastructures

Scholars of the decolonial have emphasised the need to move beyond critique, and instead called for the fostering of ‘pluriversal knowledges’. Challenging the ‘abyssal line’ that separates northern and southern knowledge formations, Santos argues for an ecology of knowledges, giving primacy to non-academic ‘contextual knowledge’ and its ‘extramural’ application, putting in question the ‘distinctions upon which university knowledge is based’. 2018 Society ‘ceases to be an object of scientific questioning, and becomes itself a subject that questions science’ (Santos, 2018, p. 203). His vision is for a ‘sociology of emergences’ that are created within social movements (Santos & Martins, 2021, p. 731) fostered through intercultural translation. At his most provocative Santos questions the existing boundaries and purposes of the university itself.

Similar ontologies are championed by African decolonial critics, including Mbembe and Sarr. Mbembe (2016, p. 37) argues that ‘decolonizing an African university requires a geographical imagination that extends well beyond the confines of the nation-state’,
including a ‘strategy of openness to dialogue among different epistemic traditions’. Mbembe calls for a less ‘provincial and more open critical cosmopolitan pluriversalism – a task that involves the radical re-founding of our ways of thinking and a transcendence of our disciplinary divisions’ (Mbembe, 2016, p. 38). Sarr sees the ultimate aim of this epistemological transformation as being the ‘construction of a library that encompasses all the libraries (libraries of the logos and the non-logos epistemologies, anti-colonial, colonial, postcolonial, decolonial and various archives, thoughts and knowledge) that are disseminated in societies’ (Sarr, 2022, p. 75). This inclusive library will enable new knowledges as well as recognise the importance of ignorance as a space of creativity and innovation. Other examples include the concept of ‘buen vivir’ (good living) informing the developmental university (McCowan, 2019; Chankseliani, 2022), and the pioneering work of Latin American intercultural pluriversities (Walsh, 2018).

Decolonial critiques are gradually transforming the normative commitments and spatial imaginaries of the social sciences. In his vision for decolonial sociology, Meghji (2021, p. 23) imagines a ‘radical relationalism that seeks to both value and recognise the agency of those in the global south’. He presents decolonial sociology as one that ‘stresses interconnections between time and space which overcome the bifurcation of the world into the west and the rest’ (Meghji, 2021, p. 24). This is echoed by Latour’s conception of ‘globalization-plus’. Like decolonial thinkers, Latour is opposed to a ‘single provincial vision of globalisation that leads to the imposition of a small number of interests, limited to a few instruments, standards and protocols’, a situation that he calls ‘globalization-minus’. Instead he calls for a global perspective that fosters ‘multiplying viewpoints, registering a greater number of varieties, taking into account a larger number of beings, cultures, phenomena, organisms and people’ (Latour, 2017, p. 55). The aim is to centre the epistemic authority of universities by opening them up to a broader range of debates and perspectives.

In their decolonial reading of global HE infrastructures, Shahjahan et al. (2017) juxtapose the logics of university rankings with those of Dagara ontology and epistemology, drawing on the work of Malidoma Somé, a Dagara healer and elder (Somé 1994). Citing Somé’s argument that there are some things that ‘knowledge can’t eat’, they contrast Dagara thought with a modern metaphysics of hierarchy and universal value. Shahjahan et al. (2017, p. 65) suggest that university rankings have become an ‘academic Olympics’ that serve to distract from the deep existential crisis that is at the heart of modern institutions and their false promises of security, progress and happiness. Whilst this radical critique rightly insists on recognising that there are other models of existence and ecologies of knowledge beyond ‘the abyss’, it moves the debate from political economy to ontology. For Shahjahan et al., calls for ‘alternative’ approaches to valuing higher education are simply part of the same modernist discourse. Shahjahan and Wagner (2019) pursue a parallel argument in their use of Japanese ‘sunyata’ philosophy to critique the discourse around impact. In what follows, I argue for the value of what Halberstam (2011) calls ‘low theory’, and the decolonial potential of mundane infrastructural reform, rather than the promise of metaphysical alterity.

Any call for pluriversal knowledge cultures means attending to the political economy of data infrastructures, their ownership and their use of data. It also means learning from the success of alternative publishing infrastructures. One such initiative is the Public Knowledge Project, and its open-source Open Journal Software (MacGregor et al., 2014). It provides a professional publishing platform for universities and journals that is free to use. Knowledge as a public good has long been a distinctive feature of the symbolic
economy of research, creating economic value in other sectors. Current battles over the future of Open Science (UNESCO, 2021) and the Open Access movement (Mirowski, 2018) highlight the importance of such initiatives. The potential of these initiatives varies widely by research system. An ecosystem of ‘scholar-led’ Open Access journals (Herman, 2021, Bosman et al., 2021), partially a response to the control exerted by highly profitable publishing conglomerates, is made possible in Europe by a well-funded research and library ecosystem. This is less easy when there is no money available. Reflecting on sub-Saharan African publishing challenges, Okune et al. (2021) set out a vision for a regional scholarly infrastructure, acknowledging the need for sustainable financial models.

There are numerous infrastructural challenges facing journal publishers in a resource-constrained knowledge ecosystem. It can be almost impossible for new journals to meet the demanding quality thresholds of the major citation indexes. The major indexes expect journals to be professionally hosted, and to meet demanding web-archiving and indexing standards. DOI registration and membership of COPE (Committee on Publication Ethics) are often financially prohibitive, and the major indexes require at least three years of regular publishing before they will consider a journal for inclusion.

There is increasing awareness that as well as creating a global prestige economy around elite journals (Kwiek, 2021), the major citation indexes marginalise non-English language scholarship (Bell & Mills, 2020), as well as journals that cannot meet their demanding criteria for inclusion. With the exception of journals published in South Africa and Egypt, only 38 of the 34,000 journals currently indexed by Scopus are published from African nations, a clear example of epistemic coloniality. Much African research is published in Open Access journals that are excluded from this ‘global’ citation economy (Boshoff & Akamnu, 2017). This exclusion highlights the importance of developing alternative data sources and publishing infrastructures. Harsh et al. (2021) draw on citation data from academia.edu, in comparison to Scopus, to highlight a rich network of pan-African citations practices that would otherwise remain invisible. Google scholar also provides a more inclusive and comprehensive source of citation data (Harzing, 2013).

There are many alternative journal databases and citation indexes. Each has a different remit and disciplinary coverage (Bell & Mills, 2020). Examples include SciELO, set up in Brazil in 1997 in collaboration with South Africa. Mexico hosts Redalyc whilst India has developed its own Indian Citation Index. The CNKI (Chinese National Knowledge Infrastructure) hosts more than 2250 Chinese journals. There are also journal aggregators and regional hosting services (such as Sabinet in South Africa or Bioline International) that provide alternative sources of reputational imprimatur.

Another response to the dominance of Scopus and Web of Science is to create regional citation indexes. Nwagwu argues that an autonomous African citation index would help draw more attention to African scholarly resources (Nwagwu, 2008). He is critical of the international indexes, the way they ‘homogenize, centralize and globalize scholarly performance criteria’ (Nwagwu, 2010, p. 228), and their lack of ‘deference to global diversity and complexity’ (Nwagwu, 2010, p. 228). He calls for ‘Africanism, recognizing and putting African knowledge into a global perspective’ (Nwagwu, 2010, p. 238). Others within the African academic publishing community demur, feeling that a regional citation index reinforces a misdirected focus on metrics, potentially creating new boundaries. There is also a concern about the commodification of Open Access publishing, with journal impact factors used to justify high journal APCs. Nwagwu’s initiative attracted
the attention of Elsevier, who explored the idea of adding an African supplement to Scopus. To date, proposals for an index have failed to attract the support of donors or national governments, who prioritise funding research rather than citation indexes.

One African collaborative initiative – the Society of African Journal Editors (SAJE) – harvests metadata from more than 1,700 African journals, and aggregates their Google Scholar citations to create an alternative African-centred journal ranking. Whilst still in its early stages, this sort of approach to developing alternative and ‘DIY’ metrics could well become more common in regional knowledge ecosystems. Scholars of decolonial higher education could find ways around the exclusions enacted by an increasingly ‘metricised’ global academy.

A decolonial research system will nurture, and depends on, ‘bibliodiversity’. Decolonising publishing means promoting regional initiatives (like CODESRIA or Global Africa), resourcing data infrastructures (e.g. publishing platforms, digital repositories, etc.) and sustaining flows of academic credibility within (and beyond) regional knowledge ecosystems (Berger, 2021). The challenge set by the 2017 Jussieu Call is to properly resource, with both finance and credibility, new inclusive publishing infrastructures, along with the right institutional incentives, to foster multi-lingual Open Science, bibliodiversity and a ‘world in which many worlds might fit’ (Escobar, 2020). A similar philosophy could inform the creation of new more inclusive citation indexes and approaches to rankings.

**Conclusion**

This paper has documented the emergence and consolidation of a ‘global higher education’ policy assemblage, built on the data infrastructures owned by international think tanks, data analytics companies and commercial ranking organisations. These organisations transform, curate and aggregate complex statistical data into globally comparable indicators and trackable metrics. Increasingly integrated into national evaluation systems, these metrics sustain the epistemic coloniality and unequal political economy of the global higher education system.

The world’s universities are ‘populated by subjects with hybrid practices, motivated by economic interest, desires for status, and the sharing of knowledge goods’ (Marginson, 2011, p. 35). Conceptual (and political) pluralism are key to this policy field, facilitating ‘situated knowledges’ and ‘partial perspectives’ (Haraway, 1988). This is not possible with the currently dominant commercial data infrastructures. Their metricised view of the world resembles what Haraway calls a ‘god trick’, an illusion that works only by ‘blinding’ us to other views.

Scholars of global higher education have, to date, had little choice but to make use of these data infrastructures, even as they critique their limitations, occlusions and epistemic injustices. Creating alternatives is not easy. There is an inherent tension between technocratic expertise and democratic principles when generating educational data (Fontdevila & Grek, 2020). The policy appeal of metrics, indicators and rankings is that they seem to offer an information short-cut, effacing other genres of knowledge and expertise.

The decolonial challenge is to foster more locatable and accountable sources of data and insight into this new world system. This is not simply about representing elite universities as ‘privilege machines’ (Connell, 2019) or analysing the metricised exclusions of the citation indexes and ranking infrastructures (Bell & Mills, 2020; Kuzhabekova et al., 2015). The decolonial study of global higher education needs to go beyond critique, and instead find ways to democratise data infrastructures and foster epistemological
inclusivity and diversity (Mills, 2020; Okune et al., 2021). The future of decolonial higher education will be determined by the political economy of data infrastructures.

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**Notes on contributor**

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