Research excellence is a neo-colonial agenda (and what might be done about it)

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SUMMARY
Research "excellence" is a central target of policy, researchers and institutions. Increasingly it is a target of criticism for the way in which it reinforces systemic biases in power, reduces diversity, and excludes many participants from the processes of scholarship. In this chapter I argue that in the context of post-colonial and transitional countries research excellence is particularly dangerous because it represents a neo-colonial agenda, one in which powerful actors at the traditional centres of western scholarship are imposing systems, infrastructures and services that will enable expropriation and dominance. The term "neo-colonial" is deployed deliberately to emphasise that this is a new cycle of imposing imperial systems on post-colonial and transitional nations that damage the ability to create or preserve local institutions that support knowledge production for society. Using the Sabato-Botana Triangle as a model to describe and analyse interconnectedness among local systems of industry, knowledge production and government the paper will examine how an over-emphasis on international, or non-local, connections is damaging to research systems and society more broadly. The "Research Excellence" agenda systematically privileges and reinforces connections between local knowledge production and "international" power centres. Addressing this will require building new infrastructures, institutions and culture that privilege an "interconnectedness of the local" and track and reward the information flows that strengthen local ties, and to build trust and credibility in locally relevant and valuable scholarship.

Introduction

The pursuit of "excellence" is central to the identity of today's researchers, research institutions, funders, and national research strategies. Most funders and national policies reference "excellence" or "quality" as one of the main criteria for support. Researchers advocate for the importance of their own work with claims of 'excellence' bringing a wide range of evidence to support their arguments. However, it is rare for these terms to be clearly defined or for common definitions to be agreed.

Even where policy agendas seek to support qualities of research that lead to outcomes, engagement or wider impacts care is taken to distinguish between traditional conceptions of research excellence, and these "new", "complementary", or "expanded" aspects of evaluation (Donovan 2007). Researchers in turn seek to reinforce this dichotomy by claiming that agendas for

impact and engagement risk damaging research excellence (Chubb and Watermeyer 2017). The argument that there is little distinction in practice between outcomes and impact on further scholarship and outcomes and impacts that occur in the wider community[1] have largely been ignored in favour of a sharp distinction between "excellence" and "impact" (Donovan 2007). Yet, as we have previously argued (Moore et al. 2017), this concept of "excellence" is an empty rhetorical construct with no common meaning and no value. In fact, it is deeply damaging to the production of research with relevance and importance to actual policy goals, development, and the improvement of wider publics, as well as to the qualities of curiosity driven research it is supposed to protect. It drives instrumental, rather than values based and normative, behaviour and is at the centre of almost every problem facing the western academy, from issues of diversity, inclusion and bias, to the rise in fraud and malpractice.

All of these issues are further compounded in the context of countries that are outside the traditional power centres of western scholarship. Control of the systems of research communication, and current modes of evaluation, is firmly vested in the hands of North American and European scholarly institutions and corporations. The historic development – both positive and negative – in our conceptions of the proxies and signals of research excellence is entirely based on the concerns of countries close to the North Atlantic, with an equally narrow literature, modes of assessment, and service providers.

The form and structure of research institutions in many countries, particularly south of the equator, is a product of colonial and post-colonial histories. For example in South Africa most of the older institutions of higher education and research have explicitly British or Afrikaans origins. Institutions founded after independence have their own character and challenges rooted in the particular historical issues of South Africa and the apartheid and post-apartheid period (Soudien 2015). All of South Africa's institutions are grappling with the question of de-colonization and its challenges (Joseph Mbembe 2016). Many of these challenges are common to other post-colonial countries.

In this chapter I want to argue that, while the agenda for research excellence is connected strongly to this colonial and post-colonial history, the agenda is in fact *neo-colonial*. Recent work is showing that our current conceptions of research excellence and their signals only arose over the past 50 years. This suggests that their adoption and spread through countries with a colonial legacy should not be seen only as a consequence of history but also as a new wave of epistemic colonization. This distinction offers important ways to recognise, tackle and address the problems and opportunities in a post-colonial context and suggests ways in which these countries can provide leadership to and build community with other post-colonial, developing and transitional nations. More than this it can help us to understand how these experiences can provide leadership to Europe, North America and other traditional centres of western scholarship that appears unlikely to arise internally.

A brief speculative history of research excellence

One of the challenges in this space is that historical analysis of post 1945 development of research institutions and culture is both sparse and challenging. What follows is therefore a necessarily speculative and anecdotal description rather than a rigorous historical analysis[2]. This is an important area for future research.

Prior to 1945 research and scholarship was largely the preserve of clubbish institutions in the countries and regions bordering the North Atlantic. Arguments about what constituted 'good work' or a 'good scholar' have a long history. The broad form of these arguments were largely

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[1] For two examples of quite different arguments along this general line see (Neylon 2015; Frodeman 2017).

[2] The work to consult in this area is that of Fyfe and co-workers (e.g. Fyfe and Moxham 2016, Moxham and Fyfe 2017, Fyfe et al 2017), Baldwin (2015a, 2015b, 2017), Czisar (2018) and others. It is a growing area but sparsely populated as yet.

focussed on who would be allowed into those traditional clubs with national academies such as the UK's Royal Society being a significant focus.

After 1945 there was a massive expansion of national funding of research, firstly in Europe and North America but later globally. Universities in colonial settings including Africa and Latin America, but also countries like Australia, that had been largely built for the local training of professional classes, or for education of the children of colonial administrators, grew as research centres in their own right, and then as centres of national pride and prestige with independence. This expansion of both the scale of research and number of researchers and of state investment with its consequent focus on the productivity of that investment led to a range of challenges for the academy. First, the club-based modes of evaluation in which personal recommendation and direct knowledge of the researcher being evaluated broke down as the size of the community grew. Simultaneously the growth of government interest in the deployment of their investment led to deep anxiety about the autonomy of research institutions.

As Baldwin (Baldwin 2017) and others have noted it is these two strands that led to the institutionalisation of peer review. Peer review functioned both as means of establishing autonomy of the academy – only peers can do peer review – and through the standardisation of the process of review allowed the scholarly literature to scale up, while still having its boundaries clearly defined. The scaling up of the journal literature meant that it was necessary to develop common protocols that defined what would count as 'scholarly'. Peer review came to serve that function, but it was only from the 1970s on that it was considered a universally necessary component of scholarly publishing.

Later, the "impact agenda" grew out of a similar concern for governments and funders interest to understand and maximise the economic impact of research. In the UK and Australia particularly, research communities mobilised against this narrow scope of assessment and the idea of "wider impacts" was developed, particularly in Australia (Donovan 2008). Broadly speaking the research community remains opposed to these agendas, as they threaten the autonomy of the academy to set its own priorities, and makes academic work subordinate to the needs of the community or the state (Smith, Ward, and House 2011).

"Research Excellence" is often deployed in dichotomous opposition to impact and societal engagement agendas as a way of defending autonomy. For instance in the work of Chubb and co-workers (Chubb and Watermeyer 2017; Chubb and Reed 2018) based on interviews with researchers in Australia and the UK on their experience of requirements for grant submissions, interviewees object to the way in which impact requirements lead them to overstate claims or indeed lie. This is implicitly contrasted with the serious and rigorous approach which the interviewees claim is applied to the description of the research outcomes themselves.
This deployment of research excellence as a rhetorical tactic to defend autonomy has many parallels with the development of peer review 40 years earlier. It arrogates assessment to internal mechanisms of the academy, and it privileges the standing of traditional centres of power and senior leadership to describe, evaluate, and embody that excellence. While the tactics have been largely successful the increasing scrutiny of governments has required that the academy present more substantial evidence of this claimed research excellence. Simple claims of expertise and authority are no longer sufficient. This in turn has led to a heavy reliance on supposedly objective measures such as citation-based proxies.

Not surprisingly this has coincided with an increase in the availability and use of citations as a proxy or correlate of "excellent" research. The availability of data through the release of Science Citation Reports led to debate on the meaning of the data, which ultimately gave rise to the assumption that citations were a measure of "research impact" borrowing from the term "Impact Factor" coined by the Institute for Scientific Information (see Bornmann and Daniels 2008 for a review of this debate).

The assumptions that such quantitative data are in any sense objective, that they represent appropriate incentives for the research community, or that quantitative assessment and rankings of any sort are appropriate have come under significant criticism since they were introduced.

Nonetheless concepts such as primacy of citations, the importance of journal brand and impact factors, H-indices and institutional rankings have rapidly become deeply embedded in the assumptions and practice of the academy globally.

Research excellence as a neo-colonial agenda

The challenge of confidence and quality

Many of the challenges facing countries seeking to develop their research capacity can be seen through the lens of self-confidence. When compounded with resource limitations this leads to a perceived need for external validation and certification[3]. A concern for effective investment requires identifying research and researchers of high quality that justify the investment being made. In turn this leads to a search for 'objective' and 'international' measures that can be used to determine quality. In contexts with a history of corruption or nepotism the perceived need for outside objective validation can be very strong.

This lack of confidence, both as individual decision makers, and more broadly in the sense of subjugation vis à vis the North Atlantic is in many cases a colonial legacy. The systematic disruption of indigenous and local systems of knowledge, governance and communication, and their replacement with those of the controlling power was a core part of the colonial system. Similarly, the legacy research institutions, and the global system of research communication are explicitly colonial systems.

Building a new academy founded on local needs and values which also interfaces with the international system is difficult. Rebuilding locally founded capacity and confidence while also having the internal capacity to identify what is valuable in the "international" system can be – or at least can be perceived to be – at odds. In particular there is a risk of the same false dichotomy discussed above being set up. That is, that the setting of local priorities towards societal engagement and wider impacts is positioned as being in opposition to "objective" and "international" measures of "excellence".

In addition, those who were brought up and achieved success in colonial and post-colonial systems, whether locally or in the institutions of colonial powers, are invested in that particular form of autonomy for the academy which is aligned with European and North American (North Atlantic) ideas of excellence. Autonomy of scholarship is critical for a developing or transitional country. It is an important part of building productive institutional forms for a pragmatic and modern knowledge-based state. A well-functioning academy will balance a necessary separation from the state to preserve its autonomy and freedom to examine, criticise and recommend, while sharing the concerns of the state, and of various communities, to deliver scholarship for the public good.

There are serious difficulties in simultaneously building confidence in local capacity and expertise, gaining sufficient confidence of government and the state to build institutional autonomy, and developing a strong culture of *internal* assessment that builds on strengthened culture and values.

The neo-colonial nature of available proxies

In the context of this struggle for decolonization the appeal of reaching for "international" and "objective" measures for validation is obvious. Numbers offer the illusion of these qualities but in fact the numbers available do not deliver them (Wouters 2016). They are not objective in as much as they are based on opaque and commercially focused selection decisions. They are not

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[3] Grosfoguel's critique (Grosfoguel 2000) of Dependency Theory and its associated political movement, and what I refer here to as a "lack of confidence" provides an interesting counter. This is similar to their discussion of 'feudalmania' as a more thoroughly worked out description. However Grosfuegel would critique the implicit stance of 'developmentalism' in my argument.

international, because they are built almost exclusively on the historical needs of North Atlantic American researchers, publications venues, and publishers.

Once more, the agenda of Europe and North America dominates the discourse, describing what matters and what is important. That which is considered important in Cambridge (or Cambridge) is "international" whereas that which is important in Ubatuba, Hanoi or Lagos is merely "local". These surface issues are well discussed. What is more problematic is the much deeper integration of this "international" system of scholarship into organizations running to European and North America imperatives. Just as the two East India companies, running from Amsterdam and London sought to control the modes, mechanisms and infrastructures of trade in the 17th and 18th century, multinationals based out of those same cities dominate the infrastructures of research assessment and communication.

Just as the expansion of international trade was driven by a gradual depletion of accessible natural resources in Europe and North America and the massive opportunities that new transport technologies brought to exploit resources in Africa, South America and South East Asia, companies today are seeking new resources. With a limited scope for increasing market size and revenue in the saturated markets of the North Atlantic Region, the web enables Clarivate and Elsevier (as well as other companies and non-profits) to pivot to new set of countries, including the post-colonial nations[4], investing in the expansion of their knowledge base and institutions as new markets to grow and exploit[5].

This is therefore a process of re-colonization. If "data is the new oil" then expropriation of data, knowledge and human capacity by powerful corporate and state actors is a logical consequence. As with the colonisations of the 17th-19th centuries this starts by dismantling local governance and capacity and replacing it with that of the colonizing powers. Technical infrastructures, forms of evaluation, and the data that support them are all controlled by powerful corporate actors with no significant oversight of their governance, selection processes, or design.

As with previous cycles of colonization these systems were built largely for North Atlantic customers to benefit largely North Atlantic investors and then provided to the rest of the world with the claim that they are "neutral", "objective", and "international". As with previous cycles the interlocking institutions of evaluation, resourcing, recording, and dispute resolution are coupled together to make it difficult to engage with just a part of the system and close to impossible to unpick the pieces once they are implemented. In this sense the East India companies were early masters of vertical integration as a business strategy.

The Sabato Triangle in a networked world

Just over 50 years ago Sabato and Botana (Sabato and Botana 1968, see also Sutz, this volume for more details) released a paper that has apparently never been translated into English. First presented at the World Order Models Conference and published in *Revista de la Integración* the paper *La Ciencia Y La Tecnología En El Desarrollo Futuro De América Latina* provides a model of how different sectors combine to support development within a nation. Some 30 years before Etzkowitz and Leydesdorff (Etzkowitz and Leydesdorff 1995) proposed the Triple Helix Model, Sabato and Botana described how government, industry, and knowledge production sectors needed to interact and build on each other to deliver development. This is represented as a triangle with the corners representing each sector (see Figure 1).

Central to Sabato and Botana's argument is that for development the strength of each corner is less important than a balance of the interactions between them. In particular they point out that a specific failure mode arises when one of the corners has stronger interactions with the "international" system than with the other sectors of the local system of development. In their

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[4] My focus here is on the post-colonial countries of Latin America and Africa. A large part of the commercial pivot has been towards China as a major new market. While aspects of my argument are relevant to China and other East and South-East Asian nations the context there is different in important ways that are beyond the scope of this paper.

[5] Clearly this is not restricted to corporations focussed on research services but also applies to the global corporate-states of Google, Amazon, Apple, Facebook, but also Tencent and Ali Baba offering a different view on the identity of colonial powers.

view the failure of earlier programs of development that combined parallel investments in industrial capacity with investments in knowledge production and technology was being caused by a lack of interaction between the sectors that are intended to arise from these investments.
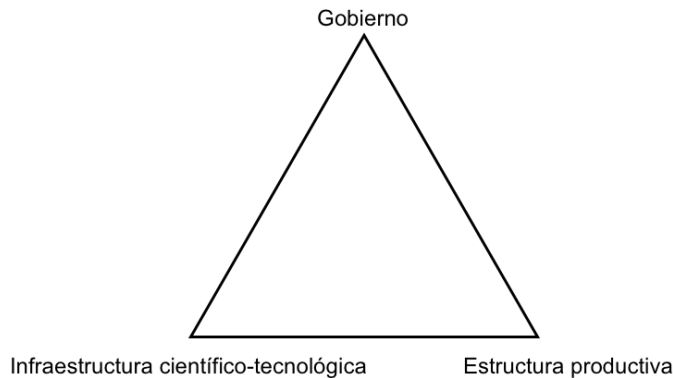

Figure 1. The Sabato-Botana Triangle. Adapated from (Sabato and Botana 1968). "Gobierno" is the system of government, "Estuctura productiva" is the industrial system and "Infraestructura centíco-tecnológica" is the scientific/technological system of research.

The modern objections to the Sabato-Botana Triangle model are that it is too simplistic and creates a too inflexible a relationship between the three sectors. As with the Triple Helix we might also argue for the addition of a fourth corner, civil society and the media, as more fully reflecting the interconnections in society (Carayannis and Campbell 2009). Nonetheless the Triangle as a conceptual model offers a valuable way to complement classical analyses such as Dependency Theory and Decolonization in providing a framework that emphasises the importance of the *interconnectedness of the local* alongside the importance of valuing the local.
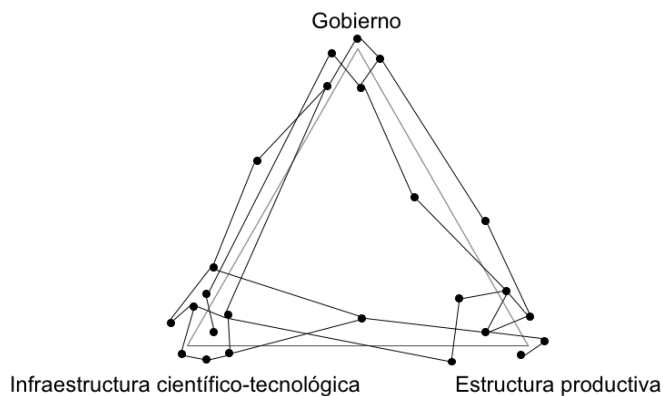

Figure 2. Adapting the Sabato-Botana triangle to a network view. The three vertices of the triangle represent well interconnected groups within broader society. Some actors will bridge between groups and play an important role in creating and maintaining links. Some of these links can be tracked and monitored with available data, primarily through citation and co-authorship links within the scientific-technological system.

To apply the Sabato-Botana model in a networked world (Figure 2) it is necessary to break down the more rigid categorisation implied by the sharp corners to consider agents, and their connections. This provides a powerful way of analysing - see Figure 3 - how different actions and players strengthen and weaken connections, either within the local triangle or outside it. More than this we can probe our ability to ask these questions and identify gaps in our knowledge that would help us to track the creation, breaking, strengthening and weakening of these connections.

Sabato and Botana note one form of this in the 1968 paper describing the loss of talent to overseas systems:

> *En América Latina, el éxodo de talentos es la típica consecuencia de la falta de inter–relaciones entre la infraestructura científico–tecnológica, la estructura productiva y el gobierno. Por esta razón, los científicos formados en nuestras sociedades, faltos de incentivos, se relacionan con una infraestructura científico–tecnológica del exterior. Pero al actuar así, el científico que emigra hacia los grandes centros de los países industriales, se integra en un triángulo de relaciones plenamente capacitado para satisfacer las demandas que plantea su tarea específica. Mientras en nuestras sociedades el científico se encuentra desvinculado y aislado frente al gobierno y a la estructura productiva, en el nuevo lugar de trabajo, al cual lo conduce su exilio cultural, está automáticamente amparado por instituciones o centros de investigación que, a su vez, se encuentran insertas en el sistema de relaciones que hemos explicado.*
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> *In Latin America, the loss of talent overseas is a typical consequence of the lack of connections between the scientific and technological structures, the industrial production structures, and the government. Scientists trained in our society are driven by incentives systems to align themselves with foreign scientific and technical infrastructures. Scientists who emigrate to the centres of scholarship in industrial countries become fully integrated into an existing triangle of relationships, fully equipped to meet the demands of their specific tasks. By contrast, in our societies scientists are disengaged and isolated from government and industrial structures. In the new workplace, to which their cultural exile leads them, they are protected automatically by institutions or research centres which are already engaged in these systems of relationships.*
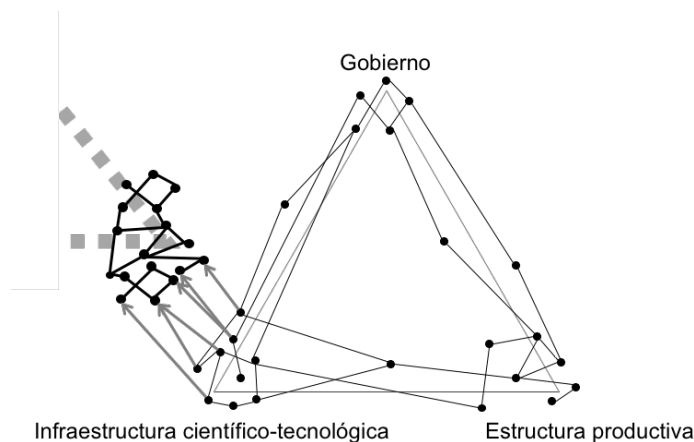> [author's translation based on Google translate]

Figure 3. The biasing effect of strong interactions with the international research system. Rhetorics of "research excellence" privilege connections of the form shown as arrows from the national/regional system to international connections. This weakens local relationships, both within the scientific-technical system and more broadly to society, including the fourth vertex of civil society that is not present in the original triangle model.

Today we can consider directly probing these processes. Do scholars who emigrate from post-colonial countries return? Do they strengthen local connections amongst scholars or simply strengthen the spokes of networks that have their hubs in the old colonial centres? Other chapters in this volume illustrate some of the ways this analysis can be tackled alongside recent work by Sugimoto and co-workers (Sugimoto et al. 2017). More generally we can examine the flow of citations, of the use of concepts and ideas, how this changes over time, and whether it is evidence of flows to those same traditional hubs, or of strengthening local connections and building local networks and hubs.

We can also critically examine what information we not have that could aid in this analysis. There is a lack of information sources that would aid in the tracking the strengthening and weakening of ties between the research, industrial, and government systems in a consistent and scalable fashion. There is also a lack of coverage, even within the information on the research system, of journals based in post-colonial and developing countries, of languages other than English and of topics of interest beyond the North Atlantic.

We therefore have two interlinked questions. The first is, which actions and choices strengthen the local ties that support development (and arguably innovation) in a balanced manner? The second question is what information gaps do we have in seeking to answer the first question. The first question seeks to address issues that are frequently a colonial legacy. The second, and in particular the gaps being created by information gathering focused on narrow and North Atlantic focused modes of evaluation and the bias towards measuring and valuing non-local connections is neo-colonial.

This is true in terms of the immediate concern of how a post-colonial or transitional country is capable of evaluating its own progress, but the damage goes deeper than that. The North Atlantic focus of the data combined with the narrow conception of "research excellence", and corporate strategies of vertical integration that they are built around deliberately undermines the ability of these countries to develop their own systems of strategic information. Again, this parallels the strategies of the corporate-state actors of the 18th century. The advantage that developing and transitional countries have is the ability to recognise that this is a *new* cycle of colonialism and to act accordingly with the knowledge of history.

How do we address these issues?

As noted above and as is the case with decolonizing agendas more generally the question of how to respond is not straightforward. The challenge of capacity building in developing and transitional countries is a real one. A significant part of the colonial legacy was the weakening and destruction of local knowledge, communication, and governance systems. Complete disengagement from colonial and neo-colonial systems is not an option. Nor, obviously, should complete acquiescence be. The challenge is in identifying which parts of these systems are valuable in a local context and how they might be appropriated. This is important because the model above, while it emphasises a focus on the formation and strengthening of local connections, does not provide an answer as to *which* connections will be of value in that local context.

Being internationally engaged is not inherently problematic. Building and strengthening local institutions of research and knowledge production that provide the capacity to appropriate and exploit knowledge produced in traditional North Atlantic centres of scholarship is a sensible policy goal. Building and strengthening a profile within the constraints of North Atlantic concepts of "excellence" can also be a sensible tactical or strategic action in the context of building that capacity, attracting and retaining talent and investment. Appropriating and exploiting the affordances of platforms that support those systems may be a significant part of these approaches.

The challenge is in identifying which parts of the appropriated system are of local value, which will further structural bias, and how these are connected. The distinction Connell makes between "western" and "imperial" knowledge (Connell 2016) may be of value here, provided we recognize the way in which the tools and approaches which may be of value in general (the "western"), are tightly coupled to systems and processes which sustain the power imbalances that underpin the "imperial" (Chan et al. 2018). Aspects of good practice articulated within agendas such as that for "open scholarship" include reproducibility, transparency and effective communications. These may seem like unambiguously good approaches but their implementation is also often tied to systems and structures that require access to significant – and costly – technical infrastructures such as computational capacity and telecommunications networks (Chan et al. 2018).

Any such appropriation carries its own risks. These are "the master's tools" after all (Lorde 1984). Lorde's call in the paper that starts with those words is to give space and voice to the disenfranchised. In this context it is critical to do more than merely listen, or merely incorporate those voices, but to create the institutional forms that *privilege* that diversity of voices. Lorde addresses this in the context of the necessity of a diversity of women's voices:

> *Advocating the mere tolerance of difference between women is the grossest reformism. It is a total denial of the creative function of difference in our lives. Difference must be not merely tolerated, but seen as a fund of necessary polarities between which our creativity can spark like a dialectic.*

The core problem of the rhetoric of research excellence is its homogeneity and its consequent privileging of North Atlantic and therefore inevitably white voices. It is this homogeneity, combined with existing structures of power and prestige that is problematic. From university rankings to individual hiring decisions this drives actors at all scales to seek to become the same. The mismatch between the apparent goal and the needs of society may be most obvious in post-colonial and transitional countries, but it is also a growing problem for scholars in the so-called first world. As we shall see it is the experiences and culture of scholars and institutions beyond the traditional centres of prestige, whose creativity is already delivering that may have more to provide than those at the traditional centre.

Shifting the narratives: the qualities of quality and privileging the interconnectedness of the local

Building a rigorous and contextualised framework for deciding this is beyond the scope of this paper. It requires a program of political negotiation towards agreeing local needs and priorities alongside a social model of knowledge creation that can manage the complex flows that include the special characteristics of local knowledge. More than this it is inappropriate for an outsider, particularly one from "the centre" to offer advice. Any such advice should be treated with suspicion. What I propose below should be seen as a tentative set of actions for local decision making to consider, critique and adapt as is needed.

Building institutions immediately raises one of the hardest problem to tackle, that of shifting culture and the narrative that supports it. This is long term, and difficult work. However, careful choice of words and their deployment, or not, can be powerful. Here I want to tackle the use of two terms, "excellence" itself and "international" as examples of how deliberate choices in word-usage can be helpful.

The first step is to reject rhetorical forms and narratives that support the idea of a unitary – and quantitative – concept of excellence. Often this seems obvious and easy. It is however, extraordinarily radical[6]. It requires at its core the rejection of the idea that scholarship can be ranked. It may be *prioritised*, or *evaluated,* in a particular context of resource allocation, but an agenda of decolonization requires that the idea that any given piece of scholarship can be objectively better than another be rejected.

While there is much debate on the semantics of word choice and definition, I find the use of the term "quality" to be more productive than "excellence". In particular it is useful to deploy this term because it can easily be expanded to its plural form which emphasises the role of context and the diverse set of *qualities* that may be important. This is a significant step forward because we can

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[6] See for example Ferreti et al's (Ferretti et al. 2018) comment that "Despite different positions about the controversial underpinnings of research excellence, widely discussed by the majority of interviewees from each of the three categories, none offered slight or indirect suggestions on how to go beyond the issue of quantification of research quality for policy purposes…[signalling an] an inevitable commitment to quantification: when asked about research excellence, different actors tend to digress around specific implementations and their implications but do not question in a strong manner the overall scope of the indicator as a means to map or ascertain scientific quality".

then ask, what are the qualities of important, valuable, or well conducted research that differing localities may wish to adopt and reward.

One of the qualities that is often valued is that of being "international". As we have noted this is conflated with "prestigious" and "excellent" when in fact what it most often means in practice is "North Atlantic". So-called "international" journals are not representative either in the distribution of authors, nor readers, nor of subject matter.

This observation of the rhetorical conflation of "international" for "North Atlantic" offers one way forward[7]. That which is truly of general value for humanity in western knowledge traditions (i.e. that which is "western" but not "imperial") should be of global value or interest. Where "international" can be comfortably replaced with the word "global" this is a signal that something may be of general value. Where this replacement is uncomfortable or inappropriate it is perhaps a signal or that the issues at stake are parochial to the North Atlantic and therefore peripheral concerns for the global community.

Simply banishing the word "international" from our language – or at least that discourse held in English – may be a valuable way forward. But beyond this we need to consider how to institutionalise locality in our language. Or rather, local communities need to consider how best to achieve this. In the UK the Research Excellence Framework only awards funding to those research units that are conducting "internationally excellent" research, sending a signal that merely national research is not worthy of funding. Considering how references to local, national, and regional interests and needs are valued in contrast to the "international" and how this is valorised through the choice of terminology and rhetoric is key.

Social knowledge creation and measuring use and engagement

In other work, I and others have worked with social models of knowledge creation (Potts et al. 2017; Hartley et al. 2019; Neylon 2017). Central to all these models is that knowledge – in the sense of generalisable applicable insight – is made at the boundaries between groups. The Sabato-Botana Triangle model in the context of networks provides a means of defining at a high level what kinds of groups might be of interest, particularly if we expand the three corners to four by including civil society, media and community organisations.

Diversity is a first order principle in these models and the challenge of knowledge production is supporting institutional and cultural forms where that diversity results in productive interactions. The scaling of knowledge production requires us to seek not just diversity in itself but an increasing diversity of groups to continue contesting and generalising knowledge.

In the traditional North Atlantic centres of scholarship there are increasingly important sources of diversity in interactions beyond the academy. They come through agendas such as "wider engagement" and "citizen science". In thinking about the qualities that research evaluation and resource allocation should support a key question is how those choices foster knowledge flows *between* the academy and these communities. Transitional countries, especially those with surviving indigenous and traditional knowledge cultures have much richer resources to draw on.

The key word here is "between" not "from". Guided by the Sabato-Botana Triangle we are concerned with the strength of connections. Enduring and valued connections depends on real benefits flowing to both ends of the line. What is not proposed is a new cycle of expropriation where the only change is that the colonial state is local. Rather that the aspiration is the production of new institutions and cultural forms in which indigenous knowledge holders, local communities, and local researchers all benefit from the strengthening of connections. In concrete terms this

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[7] A challenge with the use of the terms "North" and "Northern" and equally here with the adoption of "North Atlantic" is the place of countries like Australia and New Zealand with their differing histories of colonisation and independence to those of Africa and Latin America. While beyond the scope of this article, and similar to the previous comment on China and other East and South-Eastern Asian countries, much of the same argument holds. Australian conceptions of research excellence are particularly driven by quantities of citations through the Excellence in Research Australia process and arguably the lack of independent research strategy in Australia stems from many of the same issues discussed here. However the relative level of historical and structural disadvantage is clearly distinctly different.

means expanding beyond traditional citations to ensure that those knowledge flows within the local context and from peripheral to peripheral spaces are tracked, measured and rewarded. Practically this requires an identification of important communities and a consideration of how knowledge flows between them can be tracked.

One small example of this is the recent description by Peter Dahler-Larsen of tracking of citations flowing from non-English literature (Dahler-Larsen 2018). This illustrates the use – even the subversion – of the neo-colonial infrastructure to examine different flows. It also illustrates how the process of seeking to track those flows that are not privileged by the neo-colonial infrastructure can be a challenge. Systems to do this effectively will need to be produced or at least configured to address local needs. External infrastructures may be useful but they need to be assessed and judgements made about the extent to which the systematic biases they create can be addressed and managed.

There are many ways in which citation measures could be tweaked to address the concerns of transitional countries but they remain citation counts, which render invisible a significant proportion if not the majority of global scholarship. New infrastructures will be necessary to support the rewarding of local and periphery-to-periphery information flows. Tracking community engagement offers a useful set of proxies for doing this and signals that these relationships are valued.

The qualities of traditional western scholarship that are worth adopting and celebrating may be recognisable as those that productively support equitable internal and peripheral knowledge flows. They will be the ones that support effective translation and dissemination of knowledge across the group boundaries that matter. A candidate list might include reproducibility, transparency, and effective targeting of communication to the most appropriate audiences. A candidate list to reject might include citation counts, journal rankings and impact factors, the set of problems that they privilege and the frameworks that reinforce those privileged problems.
It is well established that those things which are measured tend to come to matter. While this is almost always framed as a negative consequence it can also be a powerful means of signalling provided it is applied thoughtfully and intentionally. By identifying and seeking to evaluate concerns of local importance and the connections that might successfully address them these subjects and areas will naturally be privileged in the minds of scholars and the societal discussions in which they are embedded.

The key here lies in identifying and negotiating the set of groups that matter. This does not means a total abandonment of the "traditional" measures of excellence is necessary or even appropriate. The traditional centre of the western academy is *one* of the groups that matter. Continued interaction to maximise local "extractive capacity" for knowledge produced in these resource intensive centres is of value. But it is just one group among many. The challenge lies in a process of bootstrapping that local capacity alongside local confidence and above all community *and* state trust in the new institutions that are being formed[8]. This is nothing less than culture building and it is not a simple path, but it is the one that most preserves agency and choice.

Future directions: taking a global lead

One framing found in the current volume deals with how and whether the Global South can choose to learn from ideas on research excellence that come from the North. I believe that a deeper examination suggests that the opposite position has more merit. What can the traditional North Atlantic centres of research learn from peripheral, southern, post-colonial, and transitional countries' perspectives on what research matters?

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[8] There is much in common here with Chataway and co-worker's concept of "embedded excellence" (Chataway et al. 2017, see also this volume). The challenges also parallel the difficulties in addressing the concept of "Southern Theory" (Rosa 2014). A parallel but more critical perspective on the choices in front of "the south" is found in Thanapal's response to Lorde (Thanapal 2017).

Although it may be more impressionistic that strongly evidenced, my experience is that scholars in southern, post-colonial, and transitional contexts bring a much richer understanding than scholars from the North of how to connect scholarship to local societal issues. In Europe and North America it sometimes feels we have forgotten how to value research of local relevant, relegating it to values of 1* in the UK's Research Excellence Framework and unworthy of publication, let alone funding across much of North America.

By contrast, the systems, funders, institutions and scholars of Latin America and Africa have led the world on public access to formal publications, on the building of sharing infrastructures, and in the support of research units that have a deep insight into the societal issues around them. While the UK and the Netherlands have loudly promulgated policies and spent vast sums of money on delivering open access, Brazil had higher levels of open access for a decade and many Latin American universities retain higher levels of open access publishing than comparators in the North. South Africa has higher levels of open access to publications on issues that are the main contributors to South African mortality than the Netherlands.

Latin American infrastructures for data management and sharing are a decade more mature than shared infrastructure in Europe and North America. Southern African infrastructure like DataFirst lead the world on providing multi-tiered data management and protection. Research organisations like the South African Labour Development Research Unit and their program of "Impact Dialogues" provide a model for how expertise informed by transparent evidence can be debated and engaged with by political and government players in a productive manner.

There is much work to be done. The confidence to support and build on these existing institutions is sometimes tenuous. Brazil has lost its global lead on open access, the vast funding underpinning the European Open Science Cloud may overtake the Latin American capacities of RedCLARA and Redalyc. And admittedly, frequently these areas of success are found in the richest amongst poor countries; for example Brazil and South Africa.

Often, these are technical infrastructures, not supported by strong governance institutions and culture. Funding may be highly politicised, fragmentary, and unpredictable. The systems, and the connections between those industrial, governmental, and knowledge production systems identified by Sabato and Botana need to be strengthened together. Building the information and technical infrastructures that will allow the observation, and evaluation of these connections, while signalling that these are valuable is a delicate and difficult process. Building new institutions and culture that privilege local connections will be challenging. More than that, it is an ongoing process, and one that is unlikely to ever be finished, but will require ongoing renewal.

But underpinning all this, from my perspective at least, is that the existing institutions and culture of scholars in post-colonial and transitional countries already have a deeper rooted connection between capacity building and local needs. A deeper connection between researchers and the issues of their societies. Even amongst the researchers in these countries tackling problems in North Atlantic ways, with North Atlantic goals of publication in North Atlantic venues, the choice of problem is still guided by an awareness of context. For many researchers in Europe and North America, it feels that the very idea that they should be thinking about local issues is anathema. They must focus on "excellent" research of "international" interest.

The old centre has arguably lost its way. In my view there is an opportunity for those who have been seen to be on the periphery to take the lead, if they choose to do so.

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