

Brazil's exception to the world-class university movement

Juan Pablo Alperin,
Stanford Graduate School of Education
485 Lasuen Mall, Stanford, CA 94305-3096
United States of America

juan@alperin.ca

Abstract

The continued importance of university rankings has only served to fuel the growth of the 'world-class' university movement. There is a growing impression that, in a globalized and interconnected world, no country can do without a world-class university. No country, that is, except Brazil. While Brazil has the resources necessary to create a world-class university, evidence suggests there has been no attempt to create one. This paper draws on data from various sources to show that the government has instead focused on improving the quality of higher education in Brazil but has done so with a focus on national outcomes. Through government policies, Brazil has incentivised research, increased the number of doctoral degrees awarded, and improved the quality of doctoral programmes. While these are the types of improvements needed for a world-class university, there is no evidence to indicate an interest in joining the world-class university movement.

Introduction

The continued importance of university rankings has only served to fuel the growth of the 'world-class university' movement. There is a growing impression that, in a globalised and interconnected world, 'everyone wants a world-class university' and that 'no country feels it can do without one' (Altbach, 2004; n.p.). No country, that is, except Brazil.

Despite being among the world's foremost emerging economies and achieving increased presence on the world stage, Brazil has not pursued, in any deliberate or dedicated way, international recognition of its top universities as world-class.' It's true that Brazil has worked hard at improving its federal university system and along many of the dimensions typically associated with a world-class institution: quality, graduate education and research but for a different purpose. By looking at its internationalisation strategies, evaluation strategies, research expenditures and research outputs, this paper seeks to show how Brazil has taken key aspects of what it means to be world-class, without buying the entire package. Arguably, the result has been a particularly Brazilian model of university development; one that places serving national needs above the pursuit of international recognition.

To begin, however, we must come to a common understanding of what is generally understood by a *world-class* university, even if Altbach (2004) is right that 'no one knows what a world-class university is and no one has figured out how to get one' (n.p.). One thing does seem certain, that the rankings and the designation of 'world-class' phenomenon are intricately tied. In a self-referential fashion, world-class universities are those that appear at the top of university rankings, while the rankings measure and give weight to those characteristics at which world-class universities excel. The rankings serve the function of providing a third-party way of defining the membership in the 'exclusive group of world-class universities', since membership cannot be 'achieved by self-declaration' (Salmi, 2009; p. 15). Prior to the rankings, there was only the narrow club of reputation. Now, lesser-known institutions appear on the top

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100 or top 200 lists, giving them a chance to be labeled as world-class, even if they have not attained a world-class reputation. For what it is worth, this was unthinkable before the rankings.

International rankings systems tend to objectify certain measures of achievement and performance but the very things chosen for measurement are themselves still biased. These rankings are known to be problematic and have been the subject of much critique (Bowden, 2000; Provan and Abercromby, 2000; Marginson, 2007; Harvey, 2008). Of the two major rankings usually cited, the Shanghai Jiao Tong University (SJTU) ranking would seem to have the stronger claim to objectivity, compared to the *Times Higher Education Supplement* (the 'Supplement' has now been dropped from the name) ranking. However, both rankings use measures that are confounded with the traditional indicator of a world-class university (prestige/reputation). It is therefore no surprise to see the Ivy League schools from the United States, as well as Oxford and Cambridge in the United Kingdom, at the top of the lists. While the *Times Higher Education* gives Western universities a reputation advantage (50% of the measure is determined by 'academic peer-review' and 'reputation'), the SJTU gives the advantage to major English-speaking countries and industrialised nations who publish in English and in traditional venues. The inherent biases in the measures virtually guarantee that the dominance of Western countries (both rankings have North American and Western European universities making up at least 75% of the top 50). In contrast, Latin America cannot boast any university in the top 100 and only a handful in the top 200.

With a more regional focus, the QS rankings (which uses measures more similar to the *Times Higher Education* than the SJTU) rank Latin American universities. It shows that by Latin American standards (or rather, by Western standards but in comparison to Latin American universities) Brazil is leading the pack. The University of São Paulo (the top ranked Latin American university in both the *Times Higher Education* and SJTU) also tops the QS rankings. Brazil has another two universities in the top 10 (for a total of three), eight in the top 20 and 31 in the top 100 (QS, 2011). All this to say, even by the standards used for producing rankings, Brazil seems to be doing something right—at least by comparison with other Latin American countries.

However, these or any other ranking do not solely define world-class universities. Recently, scholars have attempted to define what it means to be world-class (Altbach, 2004; Khoon *et al.*, 2005) and several books have been written or edited on the challenges (Altbach & Balán, 2007; Salmi, 2009; Altbach, 2010). Most definitions agree on a set of basic features, including 'highly qualified faculty; excellence in research; quality teaching; high levels of government and nongovernment sources of funding; international and highly talented students,' among other things (Salmi, 2009; p. 19). Salmi (2009) adds to the definition some of the necessary outputs: 'highly sought graduates, leading-edge research, and technology transfer' (p. 19). Under these general definitions, world-class seems to be simply another term that can easily be confounded with research university, flagship, or state-building (Altbach, 2007). The largest Latin American universities are often referred to as any of the latter three (Altbach *et al.*, 2009; Levy, 1986; Ordorika & Pusser, 2007) but their failure to meet some of the criteria outlined above, make them insufficient to warrant the label of 'world-class.'

In particular, Latin America seems to be interested in having research universities and across the region, many nations have adopted and promoted the research model of the university (Bernasconi, 2007) but these countries have not pursued (or achieved) the internationalisation necessary to reach world-class status. The choice of local staff even for its flagship universities and have them attended mostly by nationals appears to have been part of a deliberate educational policy. Pereira Laus & Costa Morosini (2005) provide an overview of Brazil's limited efforts to internationalise, noting the presence of some bilateral and multilateral agreements, participation in academic networks, student and academic staff exchanges. However, as they conclude, 'very little has been done' and 'the process is far from complete' (Pereira Laus & Costa Morosini, 2005, p. 147, my translation). Yet, the international dimension

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is an integral part of what it means to be world-class, which is why the rankings favour institutions with strong international components. Drawing on students and staff from other countries, enables [universities] to attract the most talented people, no matter where they come from, and open themselves to new ideas and approaches' (Salmi, 2009; p. 21). It is precisely this dimension that Brazilian universities, not even the top-tier institutions, have largely ignored. Instead, this paper argues that Brazil has taken what it finds valuable from the world-class movement, namely the drive for improving research quality and quantity, but has done so to build universities for and by Brazilians, without a deliberate attempt to reach beyond its borders simply to rise in world rankings.

Brazilian Higher Education

Countries have differed in their approaches to producing world-class universities. Some have increased resources to their best institutions (picking winners), others have encouraged the merger of existing institutions (hybrid formula), while others have opted to create entirely new institutions (Salmi, 2009). Latin America, especially Brazil, has great public universities that 'have world-class potential' (Altbach, 2007; p. 7). If the government made it a priority, it would destine some of Brazil's large economic growth and pick a few 'winners' to elevate to world-class status given that 'the Brazilian State has almost complete power over public higher education' (Carnoy *et al.*, 2013; ch. 5).

Instead, Brazil has invested in a thriving research university *system* that has served Brazilians well. This system, it should be noted, refers primarily to the public institutions over which the government has much greater control but which form the minority of the higher education institutions. Private institutions are responsible for absorbing the vast majority of the expansion in higher education and are currently responsible for approximately 75% of all enrolment (MEC, 2011; p. 2). Carnoy *et al.* (2013) also demonstrates that Brazil's higher education strategy (on par with other so-called BRIC nations (Brazil, Russia, India, China) has focused on improving quality by investing in its public institutions while counting on second- and third-tier institutions to absorb the ever-expanding enrolment. So while it is true that the Brazilian government is concerned with the development of the higher education system, it is clear that its sphere of influence is greater limited to the subset of higher education institutions under public administration.

Yet, national policies have incentivised research at all universities, especially in the applied sciences. The number of doctorate degrees awarded in some areas (agrarian and health science) is on a par with the United States in absolute number (Steiner, 2007). Brazil is also a regional leader, with approximately 11,000 of the 18,000 doctorate degrees awarded in Latin American and the Caribbean in 2010 (RICYT, 2010). Brazil eclipses even Mexico and Argentina, the next two regional leaders (Figure 1). Not only does Brazil produce more doctorates than any other country in the region, they have increased the number at a significant rate (7% on average since 2001).

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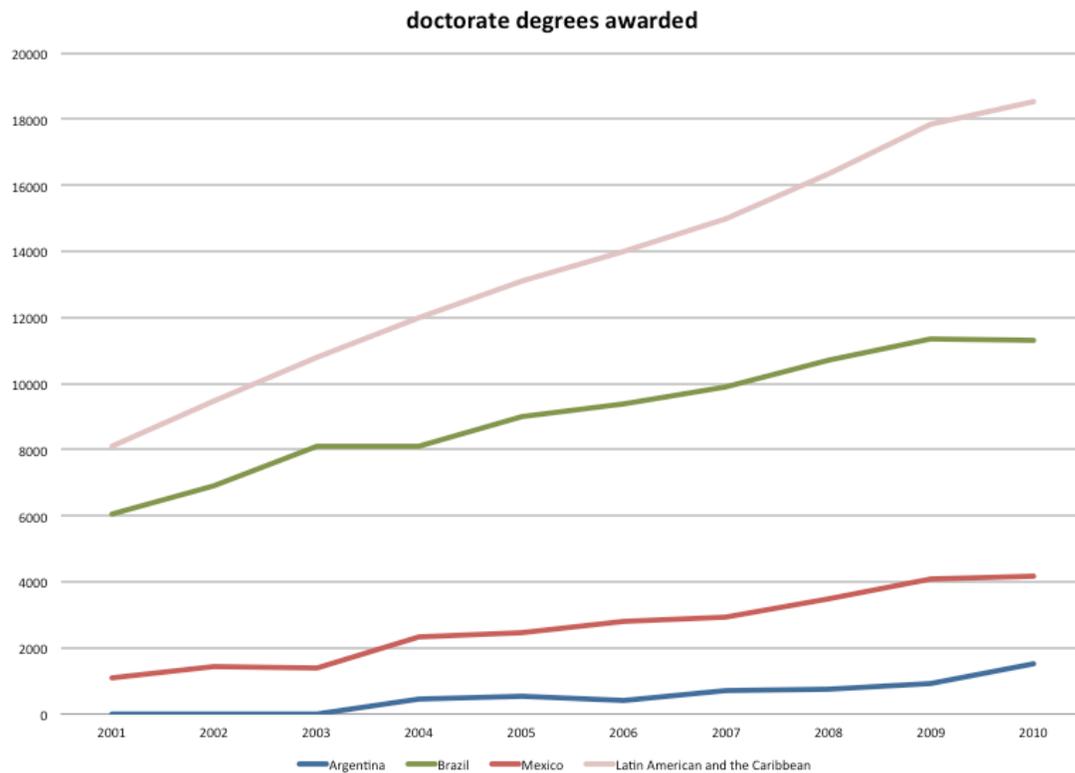


Figure 1: Doctorate degrees awarded since 2001

Source: RICYT 2012

Having a large number of graduates alone is not enough, as quality clearly matters. Since 1976, the Ministry of Education's agency for the improvement of higher education (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES) has carried out periodic evaluations of all postgraduate programmes and assigned a score on a seven-point scale. Evaluations are based on criteria established by each area of study and subsequently validated by international committees (CAPES, 2007). Of these scores, '6' and '7' are reserved for programmes that can be considered 'world-class,' according to their own definition. That is, they include criteria such as publishing in high- prestige journals, receiving international scholars (students, post-docs), producing international patents and organising conferences with international participation. Out of 2,718 programmes in 2010, 322 (11.85%) of the programmes attained this level (Table 1). Not surprisingly, these programmes are not distributed evenly across universities (five universities have close to 60% of the top-ranked programmes; Table 2). The concentration of talent at a few institutions simply highlights the potential to achieve world-class status, if only there was an appetite to do so.

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Table 1: Number of doctoral programmes evaluated at each level in 2010

Score	Number of Programmes	Percentage of Programmes
1	6	0.22
2	55	2.02
3	858	31.57
4	921	33.89
5	556	20.46
6	204	7.51
7	118	4.34
Total	2718	100.00

Source: CAPES (2012)

Note: Programmes are evaluated by Ministry of Education's agency for the improvement of higher education (CAPES) tri-annually on a 7-point scale

Table 2: Universities with most programmes classified in top categories

University	'6'	'7'
Universidade De São Paulo	46	31
Universidade Federal Do Rio De Janeiro	22	14
Universidade Estadual De Campinas	15	14
Universidade Federal Do Rio Grande Do Sul	10	11
Universidade Federal De Minas Gerais	16	9

Source: CAPES (2012)

Note: Programmes with scores of 6 and 7 (on a 7-point scale) are considered to be of 'international' calibre.

However, as Schwartzman (2005, p. 26) points out, in Brazil 'there is no general feeling that the country needs a world-class university, and USP [University of São Paulo], the university that could aspire to this role, prefers to see itself as a local institution'. In a later section, we come back to the University of São Paulo role and the ways in which it 'prefers' to be a local institution—but first we want to emphasise that the lack of world-class designation is not due to lack of resources nor a lack of quality. As the evaluations show, the quality of the programmes, at least as determined by CAPES, is high. The general sense is that the evaluations successfully connect 'performance with support, creating a virtuous circle that reinforces the best programmes, while imposing a threshold for performance that limits growth without quality' (Balbachevsky & Schwartzman, 2010, p. 4).

High-quality programmes translate into higher-quality education and a strong research profile. The emergence of graduate education in Brazil was a deliberate policy decision, dating back to the 1970s, 'around a project that puts science as a core policy for promoting the country's economic development and independence' (Balbachevsky & Schwartzman, 2010, p. 20). From the student's perspective, it has meant a high proportion of those at public universities are taught by professors holding doctorate degrees who are actively engaged in research. Such students have subsequently been shown to have increased gains in national evaluations (at least in engineering and computer science) (Carnoy & Carrasco, 2012). If Carnoy and Carrasco's findings generalise to other programmes, then the top Brazilian public universities, especially those with the highest-quality graduate programmes, are

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succeeding in providing education on par with countries with world-class institutions. On the whole, the approach of the Brazilian state seems to be succeeding in its goals of institutionalising and promoting the research-university model, deriving from it all the benefits of having a highly qualified academic staff engaged in research. Furthermore, the environment generated at these universities 'successfully concentrates [local] academics with dynamic profiles as researchers, with intense activity in international networking and publishing, creating an energetic and demanding environment for its students' (Balbachevsky & Schwartzman, 2010; p. 23): an important sought-after feature of a world-class university.

Unlike in the United States, the United Kingdom and other industrialised countries with world-class universities, the academic staff and students at the public universities in Brazil are decidedly Brazilian. In 2009, Brazil only received around 16,000 international students (approximately 0.3% of the student population). By comparison, Portugal (which shares the language with Brazil but has 1/14th the enrolment and 1/18th the population) received around 9,000 students (approx. 2.4% of all students) (UNESCO, 2009a; 2009b). One would expect the rates to be much higher at top-ranked schools, especially at the graduate level but the leading institution, the University of São Paulo, only had 180 foreign students (around 3%) out of the approximately 5,500 graduate student population in 2003 (Schwartzman, 2005). The reality is that there are no established procedures for the admittance of foreign students and neither universities nor the state have made a concerted effort to attract or facilitate an increased presence of foreign students. A notable exception is the programme 'Science Without Borders' recently launched by the Ministry of Education. This programme is Brazil's first major attempt at internationalising higher education and might be an early sign of a newly found appetite for a world-class university. This is discussed further below but note that if Brazilians wished to have a world-class university, they would have already turned to the state to support an internationalisation of the student body in order to attract the best students from around the world.

As it currently stands, universities do not have any incentives to attract foreign students or provide them with support. Bringing international students would not provide any financial benefits to the universities, since public institutions are prohibited by the constitution from charging tuition (even of foreign students). In the US, foreign students are thought to have contributed 13 billion dollars in tuition and fees during the 2009–10 academic year (NAFSA, 2010). Brazil is unlikely to attract as many students or collect as many fees but suffice to note the foregone revenue from foreign students by a law that, presumably, was intended to ensure access for Brazilians, not foreigners. Free tuition could be used as an incentive to attract foreign students but universities would need to invest and make changes 'affecting admission procedures, the use of foreign language in classes, exams and dissertations, ... [and] housing' (Schwartzman, 2005; p. 24). Universities also face issues in bringing foreign academic staff, such as attaining visas and finding a guarantor for rental housing (Downie, 2010). According to Downie (2010), the university of Campinas (UNICAMP) has attempted to increase the number of foreign academic staff and has worked to overcome such issues. However, despite attracting qualified people, they 'cannot hire any of them outright, thanks to the peculiar policies of Brazil's state' (Downie, 2010; n.p). Thus, the few efforts made to internationalise Brazilian universities are hampered by the state's unwillingness to cut red tape for the sake of establishing world-class institutions.

Brazil does better at sending students and scholars overseas. In 2009, over 26,000 students studied abroad (primarily in the United States, France and Portugal) (UNESCO, 2010). Of these, 4,344 were funded by the State through CAPES (Downie, 2010). Numbers regarding scholars who obtained their doctorates abroad are not available but 'It would not be difficult to draw a large list of professors in the best universities that were educated abroad' (Schwartzman, 2005; p. 24). However, as Schwartzman

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(2005, p. 25) also points out, for most of these scholars, 'studying abroad was a step in their local careers and their reference remains their local institutions'.

Presumably, Brazilians educated abroad have the potential for international collaborations. However, with whom Brazilian scholars are collaborating reflects their preference for 'staying local'. The number of publications in journals indexed by Thomson-Reuter's Web of Science has increased steadily since 1990, a result of the increased research activity discussed above and increases in research and development spending. However, what is surprising is that the number of co-authorships with other Brazilians (local) increases at a significantly faster rate than co-authorship with other countries (Figure 3). There is a slight decline in the number of single-author publications in 1998 but these remain relatively constant in the ensuing decade. However, the number of collaborations among national authors increases dramatically over the same time period, while collaborations with at least one non-Brazilian author increase at a much lower rate. One expects to see more local collaboration in journals published in Brazilian (a local bias) but the result is surprising given that the number of Brazilian journals included in the Web of Science remains relatively stable in the period between 1997–2006 (fluctuating only between 17 and 21 titles). That is, the increased number of Brazilian articles is due to publication in non-Brazilian journals. We see the bump in local collaborations between 2007–2008, where the number of Brazilian journals included in the database goes up to 30.

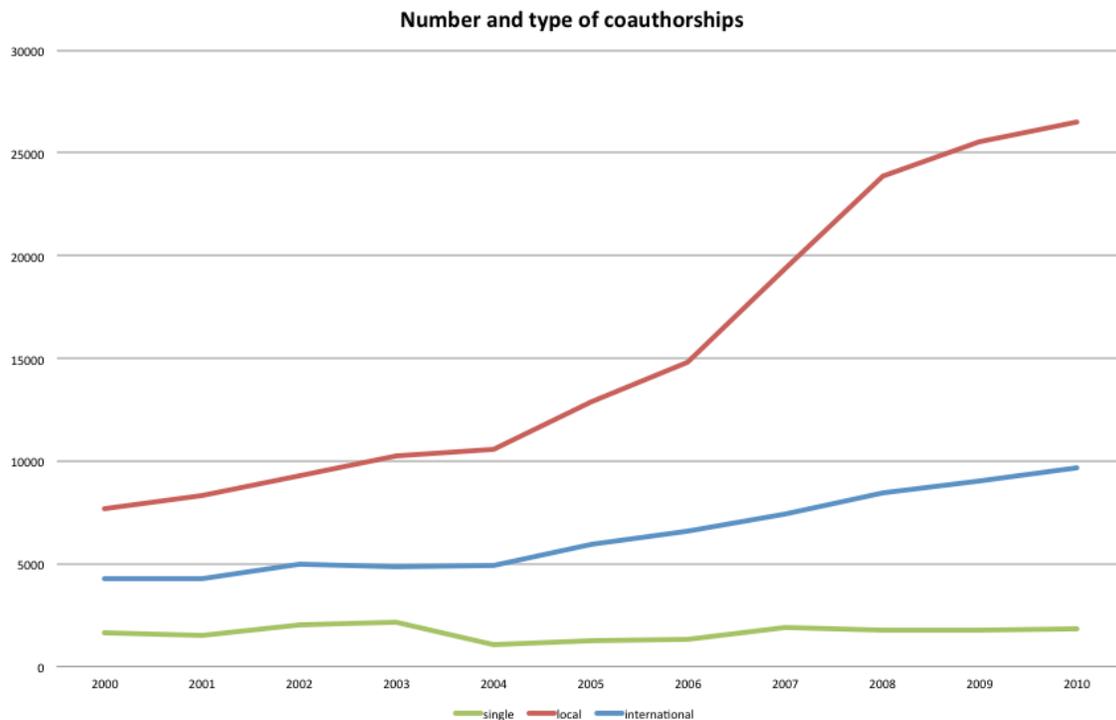


Figure 2–Number and type of co-authorships.

Source: Thomson-Reuters Web of Knowledge

A comparison in absolute number of co-authorship across the Latin American countries also reveals that international co-authorships in Brazil have increased more slowly than all other Latin American countries (Lemarchand, 2011). An effective strategy to increase international visibility would be for scholars to 'link their research to the international research community, particularly through the co-

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publication with authors that are members of networks with larger connectivity (USA, UK, Germany, France)' (Lemarchand, 2011, p. 7). In fact, this is the behaviour exhibited by most countries in Latin America: Brazil is again the exception in the region. Yet, Brazil has shown tremendous growth in the number of scientific papers published (Figure 3), a signal of the healthy research landscape in the region.

This pattern may be an artifact of Web of Science's selection of journals. However, we would expect those works to be more international in nature, since the Web of Science uses as one of its main selection criteria the citation rates from other journals already in Web of Science (predominantly US and European journals) (Testa, 2012). However, the vast majority of Brazilian science is published in journals not indexed by Web of Science. Thanks in large part to the support of CAPES, Brazil is 20th in the world and 1st in the region in the number of journals published (Haider, 2005) and has its own home-grown version of Web of Science, namely, the Scientific Electronic Library Online (SciELO), which is made up of the leading Brazilian journals and that is, unlike Web of Science, publicly funded and provides free online access to all its journals. Having a large body of journals, Brazilian scholars have sufficient outlets for disseminating their work and enough of a national audience for that work to be read and built upon. Citation analysis using both the Web of Science and SciELO databases show that many Brazilian journals have a strong national audience (Meneghini, Mugnaini & Packer, 2006). As measured by number of citations, this national audience appears to be as important, if not more important, than the international audience.

Therefore, both citation and co-authorship data point to a decided nationally oriented research culture. Moreover, they point to a nationally oriented research culture that appears to be thriving though its national market. The two agencies in charge of allocating the majority of research funding, CAPES and the National Council for Scientific and Technological Development (CNPq), have focused on strengthening graduate education and research culture but have not made concerted effort to internationalise research culture by, for example, expanding funding for international research projects: one of the key elements required for Brazil to attain a world-class university.

Brazil is catching up to the United States on the number of articles per researcher in the Science Citation Index (SCI) (the main part of Web of Science). In 2009, this number approached 27 articles per full-time equivalent researcher, the same as the United States in 2007 (RICYT, 2010). It does so despite significantly less spending, per full-time equivalent researcher, than the United States (\$146,600 in 2009 in Brazil versus \$263,600 in the United States in 2007) (RICYT, 2010). This is partly a function of a number of individuals not being explicitly tasked to do research, but largely a function of researchers now being found at every type of institution. According to one survey, 53% of academics at public universities receive external support, 27% of those at regional universities, 25% of those at elite private institutions and 7% of those at private mass institutions (Balbachevsky & Schwartzman, 2010). It appears that despite the lack of significant increases in research and development as a percentage of GDP (which has remained at approximately 1% of GDP), Brazil has succeeded in increasing its research outputs thanks to the growing presence of researchers at all types of institutions and the related growth in importance of research for academic staff evaluation.

Increasing research outputs is yet another way that the Brazilian government has strengthened a research-university model, especially among its public universities. In this sense, it can be said to have noticed the world-class university movement but unlike other emerging economies, it has chosen not focus attention or resources specifically in attaining one. Instead, it has focused on conferring graduate degrees, evaluating and improving graduate programmes and increasing its research outputs across a series of institutions intended to serve the nation. That is, it has taken some of the key elements in the

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world-class movement (rankings, evaluations and research metrics) but has re-interpreted them in its own national context, a move that Leite (2010, p. 228) sees as part of a Southern epistemology:

Instead of copying foreign ideas there is a tendency to create new ones and re-elaborate them with an anticipatory view and an accent on Global South localism. A critical mass and part of the political class adopts the neo-liberal policies initially, and then immediately afterwards it commits anthropophagi—it digests what it finds useful, regurgitates what does not concern it, and absorbs what will do it some good.

By looking at higher education policies for the public universities, there appears to be some truth to Leite's point of view. They are 'anticipatory' in that they are preparing Brazil's university system for a global market. If Brazil is to have world-class universities, they need to have strong roots in its society and 'only from these roots that they can branch out to other cultures and societies' (Schwartzman, 2005; p. 34). Brazil has adopted all the markers of world-class universities without necessarily seeking to promote any one of its top universities to full-fledged world-class status. It has used the world-class university movement as a way of promoting quality but has done so with its own evaluation criteria (CAPES), its own outlets for publishing (SciELO) and without going too far beyond its own borders (largely local co-authorships). As has been shown throughout this paper, efforts and investments have had a largely national focus and, in the few instances where they have invested in internationalisation of students and academic staff at the public universities, these efforts have been directed toward African countries and other members of MERCOSUL. For example, the 'creation of four new public universities—UNILAB, UNILA, UFFS and UFOPA—is directed towards the Global South.' (Schwartzman, 2005, p. 229)

Looking forward by looking back

The question of whether Brazil needs a university that has internationalised sufficiently to achieve recognition as world-class remains open. Long-time observer of Brazilian higher education Schwartzman seems to think there are many important reasons, 'not only because of the need to participate and compete internationally in the areas of advanced science and technology ... or the exclusive emphasis on research' (Schwartzman, 2005, p. 26–27). He also sees world-class universities as needing to 'work as bridges between the country and the larger world, and provide standards of intellectual excellence to other institutions' as well as 'the only intelligent way of dealing with the globalization trends of higher education' (Schwartzman, 2005, p. 27).

Carnoy *et al.* (2012) fundamentally agree with this latter point, although they convincingly argue that pressures for globalisation in higher education primarily operate through the state (and not, as much of the literature on higher education and globalisation suggest, through the institutions themselves). Throughout the book they argue that the state action is driven by the desire to gain legitimacy. As such, they suggest that the Brazilian government will feel increased pressure to establish a world-class university as the pressures towards globalisation continue to exert themselves. Yet, in the past decade, there has been little indication that either the state, scholars, or university administrators have had an appetite for it.

Carnoy *et al.* (2012) may still be right. In July 2011, the government of Dilma Rousseff announced a new programme aimed specifically at the internationalisation of Brazilian science, given a strong indication that internationalisation is on their higher education agenda. The new programme, 'Science

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Without Borders' ('Ciência Sem Fronteiras'), has as its primary aim 'to promote the consolidation and expansion of science, technology and innovation in Brazil by means of international exchange and mobility' (Ciência Sem Fronteiras, 2012). The results of such a programme (especially the ability of the state to change local practices) remain to be seen.

Although the programme is aimed at tackling some of the challenges in internationalisation (such as those pointed out by Downie, 2010), the programme is aimed nation-wide. It is not focused on converting any particular institution into a world-class university. It would be difficult to imagine Brazil picking *winners*, given the state's focus on access, equity and redistribution. The approach of supporting free public education of high quality, through increased investment in graduate education and research, is more attuned to the current political climate in Brazil today. The evidence can be found in the National Education Plan for the next nine years (PNE 2011–2020) (MEC, 2011) that, among other things, states the government plans to 'raise the number of graduate school entrants, increase graduate research opportunities and encourage national and international research collaborations. The government moreover intends to improve the quality of higher education by increasing the proportion of faculty with graduate degree' (Carnoy *et al.*, 2013, p. 37).

The plan does not, however, include strategies for rising in international rankings by, for example, attempting to attract a greater number of international academic staff or students. Only if a programme like 'Science Without Borders' is embraced by the administration of one of the top universities, and if the programme proves successful, will Brazil have an institution that is recognised as world-class. However, it is not clear that state support would be sufficient, as the local culture has been instilled at universities such as the University of São Paulo for years. As Schwartzman (2005, p. 34) aptly concludes 'for such a project to develop, it will be necessary to identify with more clarity the role of a leading university in the contemporary world ... [and] ... the University of São Paulo ... is one of the few institutions in the country that have the intellectual, material and political resources to accept, confront and win this challenge'.

In the meantime, the Brazilian state seems poised to deliberately produce locally defined and recognised world-class universities for Brazilians themselves, without aiming to attract international students or professors but while attracting visibility to Brazilian science. The decidedly local public universities in Brazil have strong graduate programmes with qualified professors and proven learning-gains, produce a significant amount of research and have a sufficient internal market to exchange ideas (that is, citations) in locally produced academic journals. The Brazilian government has implemented a comprehensive graduate programme evaluation scheme, funded the production of academic journals so that it is now 20th in the world in absolute number of titles and funded researchers to the point where they are able to produce more papers per researcher than the United States. If Brazil does not have a world-class university, it is not for a lack of talent or resources. It is because the country has not yet decided that this is critical to its goals as a nation.

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