

CHAPTER 22

Reinventing Greatness: Responding to urgent global-level Responsibilities and critical university- level Priorities

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INTRODUCTION

In this chapter I reflect on the contemporary significance of knowledge institutions, and particularly research universities, for both emerging and established economies and for the world as a whole, but with particular reference to South Africa and Africa.

As knowledge institutions have become ever more central to human social and economic development, and as globalization has made countries more aware of their relative positions within an interconnected world, so too have comparisons between and rankings of institutions and countries become more influential. Universities in particular are under enormous pressure, from political leaders, state bureaucrats and often their own administrators, to perform in ways which elevate their standings in terms of global rankings — heavily weighted towards research outputs and citations and the training of postgraduate research students — or to fall behind in the global development race.

The logic behind this compulsion to perform or perish is not new; it has been with us for centuries and has been spurred by successive industrial and

technological revolutions. But this dominant global development logic has intensified in recent years. As universities around the world seek to catch up with or surpass their more highly ranked peers, they reinforce this logic and the assumption that greatness in terms of knowledge and research is already known and needs only to be emulated. This assumption, however, is misplaced, and the logic which underpins it is unrealistic. In our globalizing world, greatness is evolving and must evolve, in response to the multiplication and proliferation of pressing challenges with which the whole of humanity and its planet are faced. Universities, including universities which specialize in research, can no longer be ranked primarily by their research, but also by how they and their research and other activities respond to these grand challenges, in terms of cooperation, integration, inclusion, caring and civic-mindedness. Our current global development logic needs to be rethought, and replaced by a new logic: partner or perish. It is time to reinvent greatness.

THE IMPORTANCE OF KNOWLEDGE INSTITUTIONS

Given their functions of knowledge production and innovation, the training of highly skilled citizens, and the promotion of social mobility, knowledge institutions are key to delivering the knowledge requirements for development. First, this is because of the strong association between higher education participation rates and levels of socio-economic development. Second, higher levels of knowledge and innovation are essential inputs into the design and production of new technologies, and for the development of society. For instance, the number of Ph.D.s per million of a country's population is closely correlated to foreign direct investment flows that are increasingly indispensable for development. Third, the ability of a country to absorb, use and modify new or existing technologies — premised on the knowledge production capacities and skills of their institutions and citizens — accelerates development and promotes higher standards of living. Fourth, knowledge institutions can enable developing countries in particular to transition more rapidly through stages of economic development.

Last but not least, an essential role of knowledge institutions is to identify and offer solutions to the grand challenges of human development. These challenges, simultaneously national, regional, continental and global, range from sustainable development to democratization, from growing populations to scarce water and energy resources, from global IT convergence to the widening gap between rich and poor, from epidemics to financial instability, from war and civil war to transnational organized crime, from the status of women to the future of the youth, from cities for the future to climate change, and from voluntary and forced human migrations to global governance and ethics.

Indeed, all nations now face a singular emergency: regardless of their current stage of socio-economic development, if they wish to advance from a resource-based through an efficiency-based to an innovation-based economy and beyond, a globally competitive domestic system of knowledge institutions — comprising universities, science and research councils and industry research centres — is an essential ingredient. Most nations also aspire to improve and advance their knowledge institutions with respect to global rankings, and this places extraordinary strain not only on research universities but also on all the other institutions of higher education which focus on the equally if not more essential tasks of teaching and learning. Indeed, the logic of global rankings is increasingly differentiating not just universities but also nations and regions.

THE PROBLEM WITH OUR PRESENT DEVELOPMENT PARADIGM

The trouble with our present development paradigm is that it is short-term and short-sighted, and threatens to leave the poor and the less developed further and further behind. The concentration of research resources in a minority of institutions, even in the same country, coupled with vast global disparities in wealth, ensures that the majority of universities will never significantly alter their positions in the greater scheme of things.

Another problem is that it pays no heed to the consequences of unnecessary competition, and the narrow and unreflective pursuit of rankings for the sake of rankings. Improving the global competitiveness of one nation's knowledge institutions may help it increase its odds of producing more effective responses to its particular challenges, but if isolated competitiveness is the sole focus, unleavened by the cooperative production and sharing of knowledge, no coherent and effective global response to the grand challenges which affect all countries is likely.

Moreover, while the dominant development logic may have at times driven unparalleled economic growth, it has not done so for all; and all too often growth has occurred at great human cost, coupled with environmental destruction on such a scale that potentially irreversible alterations have been made to our planet's climate. Corrupt and fraudulent manipulations of financial markets recently, in 2008, also brought economic growth to a shuddering halt, after some two decades of growth, and recovery is haltingly slow.

Our current development logic also encourages both university administrators and national leaders to make investment decisions that prioritize research over teaching and learning, since research output and impact are weighted more highly by global ranking systems. This occurs despite the fact that less developed nations require equally significant investments in undergraduate

education if they are to improve their societies' portfolios of highly skilled university graduates, or that more developed nations need to enhance the participation and success of poor and marginalized communities within their university systems, and especially their research universities, if they and their societies are to become more equitable. A more balanced and astute approach to investment in both undergraduate education and research development is now urgent.

A fundamental rethink of the dominant development logic should first consider the possibility of multiple, indeed, even dramatically different, national development paths; it may even ponder lower rather than higher future income development paths. More to the point, since universities and nation-states exist and evolve within an interconnected global system, purely institution-based or nationally focused development approaches are outdated and even counter-productive. The grand challenges of the present cannot be solved by any single scholar, leader, university or country working on their own.

Our increasingly integrated and interdependent world requires global-scale combined and cooperative innovations and solutions. To address our grand challenges we must place the highest premium on the pooling and networking of resources at a global level. It is both unrealistic and undesirable to expect the universities and nation-states of the South to emulate the resource-intensive developmental trajectories of their Northern and Eastern peers. What the knowledge institutions of the North and the East as much as the South require — taking into account the varied sizes, ages, profiles and developmental outlooks of their countries' populations — are a multiplication of global development partnerships, resource-intensive where necessary, but extensive, inclusive and all-embracing wherever possible.

RESPONDING MORE COHESIVELY AND COHERENTLY TO HUMANITY'S GRAND CHALLENGES

It is against this background that university leaders must regularly review their actual versus their announced missions and charters. Research universities, in particular, must now, more than ever before, reflect on both their own significance and the significance of their contributions to the world's systems of knowledge institutions, because it is in large measure dependent on these institutions to find sustainable solutions to the grand challenges of human development.

For research universities to effuse true greatness, they must elevate, and be seen and known to elevate, all of humanity, including the poor and the marginalized inside and outside their nation-states, regions and continents. Their

true greatness, given the present state of our world, will reside in their ability to purposefully, coherently and comprehensively take the lead on four fronts.

First, it is necessary to establish more (and foster existing) international inter-university epicentres of critical thought and conversation, so as to provide spaces for reflection, future thinking and the development of scholarly and research-informed solutions to our grand challenges.

Institutes of advanced studies and of global studies are ideally placed to step up their respective contributions when involved in active global partnerships. So too are networks and collectives, as is evident from the European Organization for Nuclear Research (CERN) and the Square Kilometre Array (SKA) initiatives, and research intensive university networks such as Universitas 21, where institutions can pool and thus multiply their efforts within diverse and cross-continental networks. These forms of global research collaboration are certainly increasing, but hardly at the scale of global investment in research and development, which has doubled within the last 15 years to US\$1.4 trillion but remains fragmented nationally, regionally and globally (Suresh, 2012: 337).

Second, and arising from such inter-university epicentres and other global research collaboration programmes, urgent action within global networks and forums is needed. To this end, Davos-like gatherings of political, business and academic leaders, equally informed by research and scholarship, must debate proposed solutions and seek agreement on the way forward, and on the roles of each of the partners involved in implementing these agreements.

Theme-focused gatherings — such as how cities of the future can overcome the challenges that cities today are facing; or how to respond more effectively the next time an Ebola outbreak occurs — will enable participants to simultaneously examine the implications of an issue for their own constituencies, understand how their constituencies are linked to others, realize how local events can trigger global emergencies, and become aware of what cooperative networks and communications plans already exist to inform policy-makers and prioritize responses. By bringing knowledge and scholarship into global public awareness, reflection and dialogue, we can make a far more significant contribution to the future prospects of our vulnerable planet.

Third, it is necessary to give concerted attention to developing and cooperatively teaching curricula which nurture more civic-minded and cosmopolitan citizens than have been produced, until now, by a narrow development logic that, in extolling resource-intensive development, has deepened poverty, widened inequality and fostered social and political conflict.

Given the avarice, fraud and collusion that led to the 2008 collapse of the world's financial markets, the values and ethics that inform our knowledge institutions' curricula clearly need revitalizing. Strikingly, our research universities are often the first to claim captains of industry as their alumni, and

many university ranking systems value this aspect quite highly; we must do more to ensure that the values and ethics our universities encourage, and the conduct we incentivize, are consistent with the best traditions of civic-mindedness, cultural engagement, inclusion, caring and the nurturing of a cosmopolitan identity. Indeed, it seems to me that research universities cannot be evaluated by their research contributions alone, but must also be judged by the impact that they have beyond research, in promoting values that advance our shared humanity and that seek to uplift the most vulnerable in our societies. In addition, developing ethics-based curricula which reflect Eastern and Southern traditions and value systems as much as Northern ones can simultaneously foster greater international research cooperation.

The fourth front against which our knowledge institutions in general and research universities in particular must lead us is to enrol and embrace far higher proportions, and secure the success, of youths and minorities from poor and marginalized urban and rural communities. More often than not, the poor and the marginalized are locked out of our universities, especially the research universities, which they either cannot afford or are assumed to be academically unprepared for, or both. Sometimes, the poor are locked into a new generation of poor-quality, high-fee private higher education institutions, where their trusting belief in the value of higher education motivates them to spend resources they cannot afford. Women, who face numerous obstacles in becoming, let alone being, researchers (obstacles all too often “justified” in the name of biology, or tradition, or religion, when it is usually just chauvinism), invariably receive fewer citations than their male counterparts, even when established as researchers and the first authors of their publications (Larivière *et al.*, 2013: 211). Entrenched gender disparities in scientific research are thus another effect of our citation-weighted global rankings.

All knowledge institutions, however, whether public or private, must be responsive to their communities. In a global context in which tuition fees are rising and state subsidies declining, and a general shift in student financial aid away from grants and bursaries and towards income-contingent loans, universities must learn to do more with less, and innovate. For example, the use of free or low-cost distance and e-learning mechanisms, MOOCs (Massive Open Online Courses) and open access materials, can reduce costs per student and expand participation. Not all research requires expensive technologies, and general methodologies of research can often be taught without any equipment. Moreover, one of the cheapest and most effective forms of including the poor and the marginalized is simply to welcome them and make them at home, by creating an enriching student-friendly learning and living experience, fostering excellent learning and teaching practices, supporting students throughout the student lifecycle, and forging a responsible and respectful academic culture and ethos.

LOCATING AFRICA, AND SOUTH AFRICA, IN THE GLOBAL RESEARCH STAKES

Africa is rising. After Asia, Africa is the world's most populous continent. By 2050 it is forecast to be home to one quarter of the world's population (or some 2.3 billion people, half of whom will be urbanized), and including 40% of the world's children (United Nations, 2014). Africa's vast mineral wealth is well known, but recently burgeoning infrastructure development, expanding agriprocessing and strong consumer demand have made the continent a favoured investment destination. Real GDP growth rates in Africa have exceeded 5% per annum over the past decade (African Economic Outlook, 2015). Mobile/cellular telephone subscriptions reached 880 million in 2014, more than either the United States or the European Union. While only one quarter of Africa's population currently has access to the Internet, usage has exploded by 6,000% in the last 15 years (MMG, 2014).

All these represent tremendous development opportunities, but they also have major implications for the continent's under-resourced knowledge institutions. Much higher and more sustained investment in higher education will be required if Africa's universities are to accommodate growing demand for higher education and lift the participation rate from its current level of 8% to the approximately 32% which was the global average in 2012 (Marginson, 2014). Africa's research productivity is also low, accounting for less than 2% of global research output: in 2008, Africa's total number of research publications (about 27,000 papers) was equivalent to that of the Netherlands (Thomson Reuters, 2010). While African researchers are more likely to co-author publications with U.S. or European peers than they are with other African researchers (Thomson Reuters 2010), much more regional and international research collaboration will be needed for Africa's essential contributions to the identification and resolving of the grand challenges of development to be disseminated to the world.

South Africa's higher education system shares many of the features of its African counterparts, although it stands out in a number of respects. There are just under 1 million students enrolled in its public universities, but 85% of these are in undergraduate programmes, and only 7% are undertaking Masters and Doctoral studies. Science, engineering and technology programmes accounted for just under one-third of all graduates in 2012 (DHET, 2013).

However, South Africa is certainly the most prolific African researcher across the majority of the main knowledge fields (Thomson Reuters, 2010). In the last decade, its research output has doubled, and its international research collaboration has tripled. The country is among the world's top five in plant and animal science research, and very productive in the geosciences, social sciences and chemistry; it also exceeds world averages in environmental and

ecological sciences, space sciences, immunology and clinical medicine. From 2001 to 2012, South African authored papers indexed in Science Direct were downloaded more than 20 million times, with the U.S. accounting for 16.9% of these downloads, China for 9.7% and the U.K. for 8.6% (Elsevier, 2013). However, just as Africa's research output is the same as that of the Netherlands, South Africa's — which accounts for 40% of Africa's output — is matched by Harvard University alone.

South African universities also continue to be shaped by their colonial and apartheid pasts. Notwithstanding enormous progress, such as the doubling of university enrolments over the past decade, and the diversification of the student body (over 80% of all students are black, and almost three-fifths are women), the South African university profile still does not fully reflect national demographics. The low overall enrolment rate of 19% is further skewed in that the participation rate among the black population is only 14%, compared to 59% among whites. Universities' staff components are still mainly white and male (and aging): only 46% of instructional and research staff are African, and 45% are women. If the currently glacial pace of transformation is maintained, it is estimated that it will take at least another decade before student graduation figures match national demographics — and another 40 years before academic staff components do so (PMG, 2013).

This configuration is inimical to meeting South Africa's labour market (or even academic labour market) demands, let alone to maintaining its standing in the global research productivity stakes. Accordingly, the country's National Development Plan aims by 2030 to: increase the university participation rate to 30%, or 1.6 million enrolments; produce 5,000 doctorates per annum; increase the percentage of black academics to at least 50%; and the percentage of all academics with doctoral qualifications to 75% (from around 40% currently) (NPC, 2012).

Forward thinking, such as that contained in national development plans, is essential if countries are to advance themselves socially and economically, and high-quality research is a boon to clarifying and charting ways forward. But today's interdependent world means that development, and research, cannot and indeed should not take place in isolation. Reciprocal global research partnerships, aimed at mutually beneficial, sustainable solutions to our grand challenges, must be prioritized, not least because the pace of technological progress is often matched by the intensification of human need.

South Africa, with its large youth and working-age population and relatively few of the very old and the very young, has recently entered a demographic window of opportunity to increase its economic output and to invest in the technology, education and skills to create the wealth needed to cope with its challenges. It must seize this opportunity. Africa as a whole will enter the same demographic window within a decade, and it too must seize

this opportunity. But it cannot do it in isolation. Already the consequences of large sectors of our planet being rich in resources but poor in development are becoming apparent in the huge exoduses of populations, from Morocco to Myanmar, towards lands and lives they perceive as holding out greater opportunities. The South cannot fully develop its people, let alone its knowledge, without collaboration. But the same applies to the North and East, whose economies are increasingly dependent on the importation of labour at all skill levels. The opportunities and challenges facing South Africa, Africa and the South in general are not just their own opportunities and challenges; they are opportunities and challenges for the world, and for humanity at large.

REDEPLOYING RESEARCH RESOURCES

How then might just one knowledge institution — my own institution, the University of Johannesburg (UJ) — redeploy its resources so as to engage on the four fronts where, I suggested earlier, research universities should take the lead in responding to our responsibilities and priorities? Since the second of these fronts — the nurturing of scholarship-informed debates among leaders — is precisely the defining feature of the Glion Colloquium, I shall focus mainly on the first, third and fourth.

First, it goes without saying that a research university must do research. Reflecting the pressure being exerted by national policy-makers in this era of global rankings, UJ has made considerable investments in research, and as a result has tripled its research publications within the last five years. These investments, however, have been strategically focused on areas where the institution is either already strong, or can become globally excellent, or both. UJ is also focusing on smart international research collaborations and partnerships, including joint postgraduate programme offerings and the appointment of globally renowned professors and visiting professors. A prime example is the new Johannesburg Institute for Advanced Studies, a joint venture with Nanyang Technological University in Singapore, an inter-university epicentre primed to examine the grand challenges of the present and future from a Pan-Africa-Asia perspective. While acutely aware of its many domestic challenges, UJ has also set itself the task of achieving a consistent ranking within the world's top 400 universities by 2020.

Moreover, in recognition of the considerable value of research cooperation and exchange, UJ is thoroughly involving itself in prominent research university networks such as Universitas 21 and the Council of Graduate Schools, building networks for its researchers across influential global research projects. This effort is being undertaken in the knowledge that the grand challenges we face cannot be solved by a single university or nation; that said, the better any

university can equip its staff and students, the better for knowledge production in general. Hence, in addition to jointly offered postgraduate programs, the university has significantly expanded the number of its postdoctoral fellowships, and initiated a multifaceted program — replete with new assistant lecturer posts, senior tutorships and supervisor-linked fellowships — which will see the proportion of academic staff with doctoral qualifications increase to 65% by 2020.

An important sub-focus of these endeavours is an attempt to improve the quantity, quality and directionality of the global flows involving our senior students and our leading scholars. These networks could, in part, reduce the brain drain from the South by providing researchers with multiple and repeated opportunities to undertake collaborative research, share knowledge and resources, and build mutual capacities with counterparts in the North and East, without permanently relocating. With such increased interconnectivity between scholars and universities, it will be essential to develop and extend globally endorsed standards and protocols for the merit-review of research proposals and the peer-rating of scholars, such as those proposed by the Global Research Council (Suresh, 2012: 338). Over and above these efforts, by 2020 UJ aims to grow its international student body from 2,500 to 5,000, and its international academic staff complement from 12% to 20%.

Second, UJ is systematically building intellectually rigorous and ethically-based curricula which respond innovatively to the dominant development paradigm and the grand challenges of the 21st century. It is doing so by incentivizing and promoting undergraduate teaching and learning as an essentially scholarly activity, and by deepening its compulsory *Global Citizenship* programmes and its *Learning To Be* teaching philosophy, coupled with the innovative presentation of programmes built upon the phased-in use of tablets, e-books and other handheld devices. Senior undergraduate programs emphasize entrepreneurialism and preparation for the world of work, and all programs involve regular teaching evaluations by students.

Third, in order to meet its responsibility to, and ensure the success of, the poor and the marginalized of its national context, UJ is investing in academic development programs in order to improve the quality and the responsiveness of all its programs. With national unemployment exceedingly high (as much as 60% among young people, including an estimated 4 million young South Africans not in college, university, training or employment), universities cannot sit by and bemoan the continuing poor quality of public schooling outcomes. UJ is devoting a considerable amount of its free marginal assets to academically supporting and enabling poorly prepared and often first generation students to make a successful transition to the demands of university education. As much as 5% of university resources previously committed to research has been diverted to building a successful First Year Experience

Programme, buttressed by an extensive 2,600-strong tutor system and premised on early notification of underperformance.

Taking one's responsibility to the poor and the marginalized seriously can go hand in hand with being responsive to the need for highly skilled graduates. UJ's meaningful contribution to diversifying South Africa's professions and vocations is evident, for example, in the fact that 27% of all black chartered accountants are now trained at the university, with similar numbers for engineers, technicians and technologists. Research and hands-on learning experiences are also at the fore in another intervention aimed at counteracting incoming students' weak public schooling backgrounds and simultaneously, over the long term, improving the quality of future applicants: UJ's newly upgraded Soweto campus, focused on teacher education, includes a primary school doubling as a dedicated teaching school — the first of its kind in South Africa — where trainee teachers can practise their craft in an authentic setting and researchers can directly study children's learning and development (DHET, 2014).

CONCLUSION

The knowledge institution which can match its global-level responsibilities with its university-level priorities will elevate itself way beyond its standing in terms of global rankings.

The research university which includes the world in its research, which promotes and shares the flow of knowledge and scholars, which embraces the poor and does research for humanity, will be a truly great research university.

It is this kind of institution which will lead the global research community in its efforts to cooperate ever more closely in order to meet its responsibilities to itself, the planet and humanity.

It has been a truism throughout history that with greatness comes responsibility. In the middle of the 17th century, the great educational reformer John Comenius [Jan Komensky] proposed a new kind of knowledge institution, a universal "College of Light", the members of which would pay attention to themselves first and foremost, to be themselves what they should make others: enlightened (Comenius, in Piaget, 1967: 210).

The task of our research universities today is to pay attention to themselves, precisely in order to enlighten others and the world. If we must conceive of global development, and global research rankings, in terms of a race, it should not be as a race between institutions or countries considered in isolation, but as a race by humanity as a whole against the great challenges it has set for itself. Our knowledge institutions, and particularly our research universities, must be, and must be seen to be, inclusive and civic-minded, and cooperative and integrative in their efforts. There is no alternative.

REFERENCES

- African Economic Outlook (2015). <http://www.africaneconomicoutlook.org/statistics/>.
- DHET (2013) Statistics on Post-school Education and Training in South Africa 2012. Department of Higher Education and Training, Pretoria.
- DHET (2014). *Woza Sizokwakha! Building Higher Education: Infrastructure Renewal, Revitalisation and Development*. Department of Higher Education and Training, Pretoria.
- Elsevier (2013). ScienceDirect Usage Team. <http://usagereports.elsevier.com/asp/main.aspx>.
- Marginson, S. (2014). The Social Implications of High Participation Higher Education Systems. <http://www.timeshighereducation.co.uk/news/global-participation-rates-to-continue-rising-says-report/2017656.article>.
- MMG (2014). Internet World Stats. Miniwatts Marketing Group. <http://www.internetworldstats.com/stats.htm>.
- NPC (2012). National Development Plan 2030: Our Future — Make It Work. National Planning Commission, Pretoria.
- Piaget, J. (1967). *John Amos Comenius on Education*. Teachers College Press, New York.
- PMG (2013). Equity Index in South African Universities: Briefing. Parliamentary Monitoring Group. <https://pmg.org.za/committee-meeting/16621/>.
- Suresh, S. (2012). Research funding: Global challenges need global solutions, *Nature*, 490: 337-338.
- Thomson Reuters (2010). *Global Research Report Africa*. Thomson Reuters, Leeds.
- United Nations (2014). World Urbanization Prospects. <http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html>.
- Larivière, V., Ni, C., Gingras, Y., Cronin, B. & Sugimoto, C. (2013). “Bibliometrics: Global gender disparities in science”, *Nature*, 504: 211-213.