

‘El central volumen de la fuerza’

(The hegemonic global pattern in the reorganization of elite
higher education and research)

Simon Marginson & Imanol Ordorika
Monash University, Australia & Universidad Nacional Autonoma de Mexico
simon.marginson@education.monash.edu.au
ordorika@servidor.unam.mx

es el central volumen de la fuerza,
la potencia extendida de las aguas,
la inmóvil soledad llena de vidas.

*But power and volume concenter,
Capacity ranges the waters, unmoved, in the flowing
aloneness,
in a surfeit of lives*

- El Gran Océano / *Open Sea*
Pablo Neruda / *translated by Ben Belitt*

Introduction

The first sector through which the United States exercises its hold on human mentality across the world is film, media and entertainment. The creative industries in film, TV, music, books and software together generate more export revenue than any other industrial sector in the United States, including agriculture, aircraft and automobiles. Cinema in the United States generates \$6.4 in international sales on top of \$7 billion in domestic revenues; while shaping the mentalities of people the world over. The American film and television industries have a positive balance of trade with every other nation. That is, the USA exports more film and TV to each other nation than it imports. In almost every nation this ‘positive’ balance (positive that is from the viewpoint of the USA) is overwhelming in both financial and cultural terms.

In its global power, and in the often one way direction of the global flows and the interests they serve, higher education and research in the United States exercises a global dominance almost akin to the remarkable global dominance exercised by the American creative industries. Just as the USA exercises a ‘positive’ trade balance in film and television with every other nation, so personnel from American universities have a positive citation balance

with every other university system in the world - in every other nation in the world, Americans are cited by scholars from that nation more often than Americans cite that nation's scholars. The United States houses 17 of the leading 20 research universities; and educates half of the world's cross-border doctoral students. Of these talented people drawn from everywhere, half remain in the United States and join its knowledge economy, helping the US to maintain its scientific and technological advantage. The other half return to their own nations where they spread the gospel about the superiority of the American university model and the American way of life. Higher education is the second way the US exerts its hold on human mentality.

In this paper we analyse higher education as world-wide field of power, one that is undergoing the uneven processes of economic and cultural convergence generally called 'globalization'. This field of power, that combines individual higher education institutions and national systems of higher education, is criss-crossed by global flows of people, ideas, knowledge, policies, technologies and money; and in certain respects is converging on a world-wide scale. This process of global convergence is both driven by, and constitutive, of world-wide relations of power in the higher education sector. This does not mean that global effects in higher education systems around the world are simply determined by a map of power from outside the sector. University practices, and national government policies, have a relative autonomy (albeit variable) in relation to external effects; and globalization is both more complex and more nested in contingency than a simple model of political determinism would imply.

Globalization is vectored in uneven and unpredictable ways by changing and growing cross-border flows and networks, and global spaces and agencies, and all agents have some scope for autonomous action. This imparts to the field of power a certain fluidity, dynamism and openness; though without dispensing with hierarchy between national higher education institutions and between individual higher education institutions. These institutions appear increasingly as a single global grouping; albeit one in which the institutions are at the same time embedded in a heterogeneous set of national contexts, which shapes differences between them in their resources and other conditions of possibility so that we can map the hierarchies between them. But it is not enough just to say there is both global hierarchy and global flows in higher education. We need also to account for the fact that the English language, the only global linguistic medium of research and scholarship, and the English language nations and their elite universities play a dominant role: particularly the USA and UK, most particularly the United States. This hegemonic power and its gravitational effect on global flows in higher education, 'dragging' those flows in directions required by hegemony, and the effects of that hegemony in non Anglo-American nations, is the central theme of the paper. It is here that 'power and volume center' in global higher education, and the global transactions become mono-cultural and one-way in character, 'unmoved, in the flowing aloneness'; and all other cultural and intellectual traditions become nothing more than 'a surfeit of lives'.

There are many ways that globalization and cross-border relations in higher education can be subjected to critical analysis. All these ways can contribute to our understanding, though (arguably) some more than others. Every approach has distinctive strengths, biases and limits; determined in the underlying theorisations and the kind of data that are given significance. Analyses of globalization that focus on the changing patterns of global flows capture something of the fluidity and contingency of the world-wide environment, in which nation-bound certainties are relativised at the global level, questions once answered at the national level are reopened, and new questions come onto the agenda. At the same time, in 'flows' analyses there is a tendency to imagine all nodes in the global networks as more or less

equivalent and equal, despite Manuel Castells (2000) and others, so that hierarchy is under-recognised (Marginson & Sawir 2005). The analyses of 'field', 'habitus' and social and cultural capital developed by Pierre Bourdieu (1993, 1996) bring the reproduction of hierarchy back into the centre of the picture. The limit of Bourdieu's approach is that it can be overly deterministic and largely nation-state bound.

In sum, in theorising this paper we draw primarily on Bourdieu's explanation of field and Gramsci's notion of hegemony (1971), referring also to various theorists of globalization, from Karl Marx (1970) to Castells, Arjun Appadurai (1996) and David Held and his collaborators (1999). The empirical data are drawn from our own research programs, the global agencies and a range of websites, links with colleagues in different parts of the world, and our own experiences as visiting scholars in the 'belly of the beast' in the United States. We focus on comprehensive research-intensive universities. This is the most ubiquitous and the most globalized form of higher education throughout the world. All comprehensive research universities have something in common. Each is networked with all of the others.

Coverage of the paper

The first part of the paper reviews Bourdieu's theorisation of 'fields of power'. It then goes on to discuss world-wide higher education as a field of power in the context of globalization, a context rather different from the bounded national spaces envisaged by Bourdieu. The second part begins with Gramsci's theorisation of hegemony, and goes on to analyse Anglo-American (particularly US) hegemony in world-wide higher education in relation to research, teaching, language, and the relationship between universities and the state and democracy. This part reviews some well known empirical markers of Anglo-American domination, such as global research rankings, where social science operates not simply as a describer of hegemony but as one of its instruments. The third part looks at the idealized template of university, modelled on Anglo-American experience, that is now being propagated throughout the world, for example in World Bank lending programs in Eastern Europe, Latin America and Africa. It considers the relevance of this idealized template in the USA and UK, and then goes on to discuss what happens when it is exported to other part of the world, particularly in those nations with their own distinctive and well-developed models of higher education. The conclusion of the paper discusses the potential for a greater pluralisation in world-wide higher education.

I. World-wide higher education as a field of power

Bourdieu's argument about 'fields of power'

In *The Field of Cultural Production* (1993), *The State Nobility* (1996) and other texts Pierre Bourdieu outlines a theorisation of fields of power. His argument is that any social formation is structured by way of a hierarchically organized series of fields, constituting distinctive sites that at the same time are joined to and affected by other sites. These fields include the economic field, the educational field, the political field, the cultural field and so on. Each is defined as a structured space with its own laws of functioning and its own relations of force. At any given moment, the structure of each field is determined by the relations between the positions of agents occupy in the field. 'A field is a dynamic concept in that a change in agents' positions necessarily entails a change in the field's structure' (Johnson 1993, p. 6).

In any given field, agents occupying the diverse available positions - and in some cases, creating new positions - compete for control of the outcomes or resources specific to the field

in question. This competition among agents, which is not always based on conscious calculation, is pursued according to the ‘dispositions’ or ‘habitus’ in which those agents are formed, and formed themselves according to the requirements of the field. These agents (which at the level of global higher education include not just individuals but institutions, and whole national systems) are both ‘positioned’ within the field by the hierarchical relations of power within it, and also engage in ‘position-taking strategies’ in order to advance their interests. In these ‘position-taking’ strategies there is some but not infinite scope for innovations that can start to shift the balance of power within the field. Much depends on the agent’s access to different forms of capital, a notion that Bourdieu extends beyond economic capital to include social capital, cultural capital, academic capital and the like.

Every position-taking is defined in relation to the space of possibles which is objectively realized as a problematic in the form of the actual or potential position-takings corresponding to the different positions; and it receives its distinctive value from its negative relationship with the coexistent position-takings to which it is objectively related and which determine it by delimiting it (Bourdieu 1993, p. 30, his emphasis).

... the existence, form and direction of change depend not only on the ‘state of the system’, i.e. the ‘repertoire’ of possibilities which it offers, but also on the balance of forces between social agents who have entirely real interests in the different possibilities available to them as stakes and who deploy every sort of strategy to make one or another prevail. When we speak of a field of position-takings, we are insisting that one can be constituted as a system for the sake of analysis is not the product of a coherence-seeking intention or an objective consensus (even if it presupposes unconscious agreement on common principles) but the product and prize of a permanent conflict; or, to put it another way, the generative, underlying principle of this “system” is the struggle, with all the contradictions it engenders (Bourdieu 1993, p. 34, his emphasis).

Applied to higher education, as Bourdieu himself does in his study of *Homo Academicus* (1984), largely based on the French universities in the mid 1960s, the notions of field, habitus and position-taking provide a stronger explanatory framework than do the conventional analyses of higher education. These explain higher education either wholly in terms of determination from outside, by the economy or social interests; or alternately, understand it entirely in terms of internal dynamics (Naidoo 2004). For Bourdieu higher education exercises a relative autonomy, especially in the research universities, while also affected and contributing to the larger map of social, economic and political power. This relation between changing external forces and the evolving internal character of higher education is neither fixed and invariant across the different institutions and national sites, nor fixed over time, being subject to instability and to transformations from without and within.

Globalization and higher education

Globalization in this era is a symbiosis of economic changes and cultural changes. It rests on one hand on the formation of world-wide markets operating in real time, underpinned by the first world-wide system of financial exchange, and growth rates of foreign direct investment far exceeding the growth rate of industrial production. All these developments were theorized by Karl Marx’s in his *Grundrisse* (1970) more than 150 years ago, but became fully manifest only in the last two decades. On the other hand, globalization rests on the creation of the first

world-wide systems of communications, information, knowledge and culture. Increasingly the world becomes a single cultural community as Marshall McLuhan (1964) predicted forty years ago. Under conditions of instantaneous transmission of financial information the turnover time of economic capital is compressed, tending towards zero as Marx discussed (also Mandel 1975; Harvey 1989). Guy Neave describes globalization as 'quickening exchange' which is suggestive of both economic and cultural aspects (Neave 2002, p. 332).

Information and communications technologies (ICTs) provide conditions for relationship-building of unprecedented scale, variety and flexibility. This process, which is at the heart of both the economic and cultural changes and the junction between them, is the key to what is new about contemporary globalization (Castells 2000, Giddens 2001). Higher education and research are not far behind. They are foundational to culturally complex communities and the sophisticated use of technologies. Like ICTs higher education is formative of the emerging global environment. 'Although many universities still seem to perceive themselves rather as objects of processes of globalization, they are at the same time also key agents' (Enders & de Weert 2004c, p. 27). At the same time higher education is itself being transformed on both sides of the economy/culture symbiosis. It is swept up in global marketisation: it trains and resources the executives and technicians of global businesses; the main areas of student growth are in business and computing, globally mobile degrees; it is shaped by neo-liberal economic policies and the new public management, techniques of governance that are converging across the world; and in higher education itself the first global market has emerged. Even larger changes are happening on the cultural side (Marginson & Sawir, 2005). Teichler (2004) remarks that 'it is surprising to note how much the debate on global phenomena in higher education suddenly focuses on marketisation, competition and management in higher education. Other terms, such as knowledge society, global village, global understanding or global learning, are hardly taken into consideration' (Teichler 2004, p. 23). While higher education is a second level player in the circuits of capital and the direct creation of economic wealth, it is pivotal to research and knowledge; linguistic and information systems; and has thickening connections with media and communications.

Globalization does not constitute the disappearance of nations, despite some more extreme predictions. Nor are national governments are legislating themselves out of higher education. Rather they are modernizing higher education systems and regulatory frameworks, according to the logic of global economic competition and the neo-liberal policy templates that service that logic. Nevertheless, globalization has changed the terrain on which nation-states operate. It has 'relativised' (Waters 1995) governments and higher education institutions so that these are no longer sole custodian of the horizon of possibility. Both national policy and institutional performance are being referenced to the requirements and measures of global standards, formal or informal. Global market competition, for example in the education of foreign students (OECD 2004a) and on-line programs (OECD 2005b), encourages direct comparison between national systems; and global university rankings (SJTUIHE 2006; Times Higher 2005) take the process a step further (see below). Nonetheless the rise of global referencing does not signify that higher education has simply become a single worldwide network of higher education institutions. National governments retain an ordering function in relation to higher education systems. In most, though not all, nations, government remains the principal financier and the public sector is the majority provider of higher education systems overall.

The global world-wide landscape in higher education is shaped by two main factors. On one hand, cross-border relations in higher education are constituted by the inter-related global

flows across borders that constitute globalization in the sector: flows of people, faculty and students; flows of messages and other communications; flows of information and knowledge, including published and posted research and data; flows of technologies; flows of norms, ideas and policies; and flows of financial capital and other economic resources (Marginson & Sawir 2005). These flows constitute both lines of communication and also lines of influence and affect. Second, there is the map of horizontal and vertical differences between nations and higher education institutions. Horizontal differences in themselves no necessary implications for hierarchies of power, though under some circumstances they become associated with hierarchy. These horizontal differences include language and culture; differing traditions in teaching and scholarship; and different ideas about the missions of higher education including its political (nation-building) and economic (wealth-building) functions. Vertical differences between national systems and institutions include differences in resources, and differences in the capacity to produce educational outcomes and generate effects in other nations.

Theorisation of global flows

Global flows have been the subject of a number of theorisations. There are different but complementary insights in the work of Arjun Appadurai (1996), Manuel Castells (2000; 2001) and David Held and collaborators (1999; 2000) which together can be used to develop a framework for analysing global flows in higher education (Marginson and Sawir 2005).

In *Modernity at Large: Cultural dimensions of globalization* (1996, pp. 10-37 and 178) Arjun Appadurai's central preoccupation is with the effects of globalization in changing the potentials for imagination and identity. Appadurai reads phenomena that others define as 'economic' or 'political' or 'sociological' through an enlarged lens of cultural analysis. Appadurai describes 'a new global cultural economy... a complex, overlapping, disjunctive order' which involves 'interactions of a new order and intensity'. In contrast with analyses of globalization that suggest the global programming of identities, he imagines a great scope for contingency, mobility, plurality, cosmopolitanism, 'and in general, agency', emphasising always that agencies are institutions are historically, culturally and politically situated. For Appadurai both cultural homogenisation and cultural heterogenisation are always at play and in tension with each other; and globalization is not a single process but multiple processes in different sectors or domains of practice (see also Hardt & Negri, 2000, p. xv). A central part of his argument is his 'elementary framework' of 'five dimensions of global cultural flows' consisting of *ethnoscapes*, *mediascapes*, *technoscapes*, *financescapes* and *ideoscapes*. 'Ethnoscapes' refers to people in motion as workers, tourists, students, immigrants, refugees and others. 'Technoscapes' refers to rapidly changing technologies, in traditional production and the ICT sector, 'that moves at high speeds across various kinds of previously impervious boundaries'. 'Financescapes' refers to capital movements. 'Mediascapes' are more complex, referring on one hand to the medium, to 'the electronic capabilities to produce and disseminate information'; and on the other hand to images of the world the media create: scripts and scraps of narrative that are resources that can be infinitely reassembled. 'Ideoscapes' are also 'concatenations of images' but more explicitly political in origin and intention.

In *The Rise of the Network Society* (2000, pp. 71, 442-445, 500-501 and in *The Internet Galaxy* (2001), Manuel Castells provides a sociology of global networks and flows.

'Society is constructed around flows', states Castells, which are 'the expression of processes dominating our economic, political and symbolic life'. These are flows of capital, information, technology, organisational interaction, and images, sounds and symbols.

The identity of nodes is determined by the kind of network under discussion. In financial networks the flows pass through banks and corporations and regulators; in higher education they pass through universities and academic units, and faculty and students. The heart of Castells' argument is his insight into the dynamics of networking. 'Networks are open structures, able to expand without limits, integrating new nodes as long as they are able to communicate within the network' and share the same codes, for example values or objectives. Networks have an inbuilt expansionary economics which attunes them to capitalist accumulation while at the same multiplying all of their potentials, replicating the network form beyond technology and economy to all forms of social relationship.

When networks diffuse, their growth becomes exponential, as the benefits of being in the network grow exponentially, because of the greater number of connections, and the cost grows in linear pattern. Besides, the penalty for being outside the network increases with the network's growth because of the declining number of opportunities in reaching other elements outside the network (Castells 2000, p. 71)¹.

The new global setting is a network of cities and their major institutions. 'The Internet ... is the technological medium that allows metropolitan concentration and global networking to proceed simultaneously'. More than Appadurai, Castells emphasizes the inequalities generated in the global setting. 'The use of the Internet is highly differentiated in territorial terms, following the uneven distribution of technological infrastructure, wealth, and education'. Those who lack access to ICTs or do not produce value for the networked economy are disconnected, marginalised, outside the 'space of flows' (2001, pp. 211, 225, 247, 265-266).

While Appadurai uses cultural analysis to discuss economic phenomena, in their Global Transformations project, David Held, Anthony McGrew, David Goldblatt and Jonathon Pemberton (1999; see also Held & McGrew 2000) use political economy to discuss cultural globalization. They largely coincide with Appadurai and Castells in their definition of flows, nominating six areas: the military sphere, law and governance; trade, investment and finance; the global environment; global migration, including travel for tourism, business and education; media and popular culture; and global communications and transport (Held et al. 1999, p. 432).² 'Global' means practices stretching across meta-national regions and continents. 'Globalization' means more stretching and connectedness. The connections are regularised, intensified and speeded up. The local and global are enmeshed, and the impact of global systems and distant effects is magnified at the local level. In this context globalization is:

a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions – assessed in terms of their extensity, intensity, velocity and impact – generating transcontinental and interregional flows and networks of activity, interaction and the exercise of power.... flows refer to the movements of physical artefacts, people, symbols, tokens and information across space and time, while networks refer to regularized or patterned interactions between independent agents, nodes of activity, or sites of power (Held & McGrew 2000, p. 55).

Held et al. use the term 'stratification' to discuss how globalization contributes to uneven and hierarchical relations of power, including global cultural stratification, in which as they note, American cultural industries and the English-language are dominant.

Global flows, differences, hierarchy and hegemony

The spread and intensity of education varies between nations. For example, among nations that are members of the Organization for Economic Cooperation and Development (OECD), the length of time more than 90 per cent of the population are enrolled varies from 6 or 7 years in Turkey and Mexico to 15 years in Belgium. In emerging nations it ranges down to 1 year in India where much of the population is located outside a modern economy and society with few resources and competences for global engagement. In the OECD area the proportion of 25-34 year olds with at least some tertiary level education varies from 11 per cent in Turkey and 12 per cent in the Czech Republic to a high of 52 per cent in Japan and 47 per cent in Korea. The density of the capacity of nationals to conduct advanced research is very uneven: the proportion of the population with research degrees ranges from 0.1 per cent in Iceland and Mexico to 2.8 per cent in Switzerland (OECD 2005). This is a significant indicator of relative global potential, given the highly internationalized character of research

As this suggests, while higher education is a field of power in Bourdieu's sense it is not a level playing field; and in certain respects it does not constitute a single field at all. Nations and institutions across the world do not experience global effects and relationships in a uniform, even, or consistent manner. The global setting does not confront identical national systems, affect all institutions in the same way, or offer to each an equal potential to engage and act. First, the horizontal differences in higher education remain significant, despite the homogenizing effects of global flows. Nations have different histories and heterogeneous cultures in higher education. There are differences in the customary sizes and configuration (single city site, multi-site, dispersed network) of institutions within the national system. There are differences in the types of institutional specialisations on offer; differences in segmentation between types of institutions (graduate research institutes, research-intensive universities, predominantly teaching universities, vocational universities, training colleges); differences in the extent of vertical differentiation between institutions, and the roles of competition and market forces. There are differences in the balance between public and private higher education, and in the cost of education for students. There are differences in languages of instruction and scholarship. There are differences in disciplinary traditions and in academic and organizational cultures. Second there are vertical differences are differences between national systems in size, resources and capacity, that shape the kind of strategic possibilities available to nations and higher education institutions. Research plays a key role in determining the knowledge economy potential of nations, and the capacity and status of individual higher education institutions, including their attractiveness to cross-border students, including doctoral students; their capacity to attract high performing staff; and their potential attractiveness to business and industry. Research, always in some part competitive, has long been subject to world-wide standardization procedures. The world map of research activity in higher education is a key indicator of vertical differences.

Global flows and global dominance

The map of differences forms a determining but by no means fixed set of world-wide power relations. But if a nation is strong enough, it is able to 'leverage' its vertical advantage over other nations so as to concentrate global power on a hegemonic³ basis, with major effects across the whole world-wide field of higher education. Under conditions of hegemony, inequalities of resources and authority become readily normalized; and horizontal differences, such as differences between higher education systems in their traditions and their language medium, become turned into vertical differences. These elements become signs of the

‘superiority’ of one set of institutions over others. Under these circumstances, global flows mostly tend to reproduce and strengthen the hegemonic power of the leading nations/institutions at the expense of the others. In other words, the shape and even the existence of global flows becomes affected by the global map of identity and power, the map of horizontal and vertical differences. Strong nations and hegemonic research universities have a gravitational power that ‘pulls’ cross-border flows towards them, so that they draw a greater volume of the global traffic. That traffic flows in a fashion that benefits those nations and institutions more than others. Globally strong universities in leading nations draw outstanding researchers and high achieving doctoral students out of other nations and their institutions. They ‘concenter’ resources and talent at the heart of hegemonic global power and authority.

On the other hand, the world-wide field is not ‘game, set and match’ for all time. The openness and reciprocity in global flows can enable other possibilities. As the fluid ever-moving metaphor of ‘flows’ suggests, these cross-border flows are continually undergoing change and generating change. This tends to ‘loosen’ the relations of power in world-wide higher education to some extent; imparting to the global higher education landscape a certain dynamism, instability, openness and unpredictability; more so than national systems.

Signs of the global hierarchy

National system size

Size matters in the global setting. National system size is one of the principal variables that shapes the strategic options and imperatives for systems and institutions: the potential for autonomy within the global setting, and the advantages and disadvantages of a ‘stand-alone’ approach; and the potential of and necessity for engagement, alliances and partners. Very large nations, such as the US and China, have a special potential in higher education. The size advantage of the USA is one of the necessary components of its hegemony in the field, helping it not only to tower over the field but to set the rules and to engage on its own terms. All of the larger nations with developed systems are less dependent on cross-border provision to reproduce personnel and sustain a critical mass of activity; and have more scope for a complex internal division of labour on the basis of institutional mission. For example, in larger European nations such as Germany and France academic labour markets are more self-sufficient than elsewhere (Musselin 2005). The inward movement of foreign staff is more a matter of choice than necessity. On the other hand, autarky is not a long term solution in the ever-thickening global setting, higher education is now globally referenced, and nations are engaged in a complex web of competition/cooperation. If not mutual interest, then national self-interest comes into play. Nations that forgo the shaping of a global strategy will struggle to maintain global competitive position. If any nation want to pursue a proactive global role in higher education then regardless of its size, extensive and intensive engagement in cross-border flows, supported by the necessary organisational competences, is mandatory.

Middle sized and smaller nations, and other nations where national high education capacity is significantly incomplete in relation to needs, face a different set of global strategic imperatives. They can scarcely afford to abstain from global engagement, yet must also struggle to maintain their policy identity and autonomy viz a viz the larger players. This does not mean that smaller size in itself necessarily signifies absolute global weakness or no strategic options. Some small nations such as Singapore, Switzerland and the enclave of Hong Kong in China (Postoglione 2005) specialise in knowledge-intensive industries and cross-border services. They have positioned themselves as managers and brokers of global flows of

finance, knowledge and people. Here national and global strategies coincide. In all three cases, higher education capacity is both relatively strong and characterised by high rates of two-way mobility. In other words, globally successful middle sized and small nations are not just open to cross-border linkages, they tend to be highly dependant on them. To retain control over their destiny such nations must maintain a clear sense of trajectory and keep ahead of the play. For all such nations longer term partnerships and networks are primary instruments of strategy, augmenting critical mass, enabling division of labour and stabilizing engagements.

Global distribution of research capacity

The data on research performance collecting by the Shanghai Jiao Tong University (SJTU) indicate the US domination of global research capacity, and the lesser power of the other English language nations, and the strength of Scandinavia, the low countries, Germany and Japan. These patterns become more obvious as the comparison moves up the research hierarchy, from the top 500 to the top 100 to the top 20. According to the SJTU 53 of the world's leading 100 research universities are located in the United States, led by Harvard at number one. The UK provides the University of Cambridge at number 2 and eleven of the top 100 research universities. When Canada (four) and Australia (two) are added, the English-speaking nations between them constitute 70 per cent of top 100 group, in cultural terms a disturbing level of near monopoly. A further 23 of the top 100 research universities are located in Western Europe, five in Japan, and one in each of Israel and Russia. The principal Western European nations, in terms of the number of universities in the global 100, are Germany (five) France and Sweden (four each), Switzerland (three) and Netherlands (two). China and India have none of the top 100 research universities. India has just three in the top 500. China including Hong Kong has 18 of the top 500; another four are located in Taiwan.

There is a broad but not precise correlation between a nation's overall economic capacity and the standing of its research universities. Table 1 maps each nation's share of global economic capacity against its share of the Shanghai Jiao Tong University top 100 and top 500 research universities. National economic capacity is calculated by multiplying National Income with National Income per head, thus taking into account both quantitative economic weight and the intensity of wealth as measured by income per person. Each nation's share of global economic capacity is calculated by comparing its national economic capacity to the global total. The nations whose university systems are above average performers in research terms, relative to national economic capacity are Israel, Sweden, Switzerland, UK, Netherlands, Canada, Finland, Denmark, Australia and the USA. The United States performs very well in its share of the top 100 research universities but interestingly, it under-performs in its share of the world's top 500. This indicates the stratification effects of a highly competitive system – in the USA there is a concentration of research resources in the leading universities at the expense of the regional knowledge economies. Germany does well at the level of the top 500, indicating that there is a broad-based research capacity across the national system, but less well in its share of the top 100. Japan underperforms on both measures. China, Korea, Singapore, Belgium, Spain, Norway, Hungary, New Zealand, Brazil, South Africa and others are strong in the top 500 group relative to economic capacity but have no top 100 research universities.

It is significant that in the nations that do best relative to economic capacity, aside from the USA (which is so often the exception in national patterns of higher education) the private sector plays a relatively minor role in the sector; and in most of these cases, especially in OECD Europe, research resources are broadly distributed across the public university sector. Several nations that under-perform at the top 100 level have large private sectors and a highly

stratified research effort, including Japan, Korea, Poland, Brazil and Mexico. This underlines the dependence of research capacity on public investment, given the public good character of research (Stiglitz 1999). Other measures of the worldwide distribution of research output confirm the Jiao Tong map of research performance. The United States produced almost a third of the world output of scientific articles in 2001, and ‘its scientific literature accounted for 44 per cent of citations in the world scientific literature’ (Vincent-Lancrin 2006, p. 16). In 2001 scientists and social scientists in the United States published 200,870 papers in major journals. The volume from Japan was 57,420, the UK 47,660, Germany 43,623, France 31,317, China 20,978, India 11,076 and Switzerland 8107 (Table 2). In Indonesia, a middle level developing nation with two thirds of US population, there were 207 papers (NSF 2006).

Table 1. Nations’ share of the top 500 and 100 research universities as measured by Shanghai Jiao Tong U, compared to their share of world economic capacity, 2003 / 2005

nation	Gross National Income 2003	population 2003	GNI per head 2003	share of world economic capacity	share of top 500 research universities 2005	share of top 100 research universities 2005
	\$b USD PPP		\$ USD PPP	%	%	%
United States	10,978	290.8	37,750	41.8	33.6	53.0
United Kingdom	1643	59.3	27,690	4.6	8.0	11.0
Germany	2279	82.5	27,610	6.3	8.0	5.0
Japan	3629	127.6	28,450	10.4	6.8	5.0
Canada	950	31.6	30,040	2.9	4.6	4.0
France	1652	59.8	27,640	4.6	4.2	4.0
Sweden	239	9.0	26,710	0.6	2.2	4.0
Switzerland	237	7.4	32,220	0.8	1.6	3.0
Australia	572	19.9	28,780	1.7	2.8	2.0
Netherlands	463	16.2	28,560	1.3	2.4	2.0
Italy	1546	57.6	26,830	4.2	4.6	1.0
Israel	130	6.7	19,440	0.3	1.4	1.0
Austria	241	8.1	29,740	0.7	1.2	1.0
Finland	143	5.2	27,460	0.4	1.0	1.0
Denmark	167	5.4	31,050	0.5	1.0	1.0
Norway	173	4.6	37,910	0.7	0.8	1.0
Russian Federation	1284	143.4	8950	1.3	0.4	1.0
China *	6410	1288.4	4980	3.2	6.5	0.0
Spain	910	41.1	22,150	2.0	4.5	0.0
Korea	862	47.9	18,000	1.6	4.0	0.0
Belgium	300	10.4	28,920	0.9	3.5	0.0

China Hong Kong	195	6.8	28,860	0.6	2.5	0.0
Taiwan	n.a	n.a.	n.a.	n.a.	2.5	0.0
New Zealand	86	4.0	21,350	0.2	2.5	0.0
Brazil	1326	176.6	7510	1.0	2.0	0.0
South Africa	464	45.8	10,130	0.5	2.0	0.0
India	3062	1064.4	2880	0.9	1.5	0.0
Ireland	123	4.0	30,910	0.4	1.5	0.0
Poland	428	38.2	11,210	0.5	1.5	0.0
Singapore	103	4.3	24,180	0.3	1.0	0.0
Hungary	140	10.1	13,840	0.2	1.0	0.0
Turkey	475	70.7	6710	0.3	1.0	0.0
Greece	220	11.0	19,900	0.4	1.0	0.0
Mexico	919	102.3	8980	0.8	0.5	0.0
Argentina	420	36.8	11,410	0.5	0.5	0.0
Chile	155	15.8	9810	0.2	0.5	0.0
Czech Republic	159	10.2	15,600	0.3	0.5	0.0
Portugal	185	10.4	17,710	0.3	0.5	0.0
all other nations **	8219	2338.2	3456	2.9	0.0	0.0
world total	51,401	6272.5	8190	100.0	100.0	100.0

* China Hong Kong is listed separately ** Population and GDP data include Taiwan World economic capacity is measured as an aggregate of the individual nations' economic capacity, defined as GNI multiplied by GNI per head. All nations without any top 500 research universities are treated as one unit.

sources: World Bank (2006); SJTUIHE (2006)

Table 2. Output of published articles in science and engineering (including medicine and social sciences), OECD nations and selected comparators, 1988 and 2001

nation	total popul'n	number of published science and engineering articles		proportion of total world output of S & E articles		change in number of articles
	2003	1988	2001	1988	2001	1988-2001
	millions			%	%	1988 = 100
United States	290.8	177,682	200,870	38.1	30.9	113.1
Japan	127.6	34,435	57,420	7.4	8.8	166.7
United Kingdom	59.3	36,509	47,660	7.8	7.3	130.5
Germany	82.5	29,292	43,623	6.3	6.7	148.9
France	59.8	21,409	31,317	4.6	4.8	146.3
Canada	31.6	21,391	22,626	4.6	3.5	105.8
Italy	57.6	11,229	22,313	2.4	3.4	198.7
Spain	41.1	5432	15,570	1.2	2.4	286.6
Australia	19.9	9896	14,788	2.1	2.3	149.4
Netherlands	16.2	8581	12,602	1.8	1.9	146.9
Korea	47.9	771	11,037	0.2	1.7	1431.5
Sweden	9.0	7573	10,314	1.6	1.6	136.2
Switzerland	7.4	5316	8107	1.1	1.2	152.5
Belgium	10.4	3586	5984	0.8	0.9	166.9
Poland	38.2	4030	5686	0.9	0.9	141.1
Finland	5.2	2789	5098	0.6	0.8	182.8
Denmark	5.4	3445	4988	0.7	0.8	144.8
Austria	8.1	2241	4526	0.5	0.7	202.0
Turkey	70.7	507	4098	0.1	0.6	808.3
Greece	11.0	1239	3329	0.3	0.5	268.7
Norway	4.6	2192	3252	0.5	0.5	148.4
Mexico	102.3	884	3209	0.2	0.5	363.0
New Zealand	4.0	2075	2903	0.4	0.4	139.9
Czech Republic	10.2	2746	2622	0.6	0.4	95.5
Hungary	10.1	1714	2479	0.4	0.4	144.6
Portugal	10.4	429	2142	0.1	0.3	499.3
Ireland	4.0	790	1665	0.2	0.3	210.8
Slovak Republic	5.4	n.a.	955	n.a.	0.1	n.a.
Iceland	n.a.	69	174	n.a.	-	252.2
Luxembourg	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

China	1295.2	4619	20,978	1.0	3.2	454.2
Russian Federation*	143.4	n.a.	15,846	n.a.	2.4	n.a.
India	1064.4	8882	11,076	1.9	1.7	124.7
Taiwan	n.a.	1414	8082	0.3	1.2	571.6
Brazil	176.6	1766	7205	0.4	1.1	408.0
Israel	6.7	4916	6487	1.1	1.0	132.0
Argentina	36.8	1423	2930	0.3	0.5	205.9
Singapore	4.3	410	2603	0.1	0.4	634.9
South Africa	45.8	2523	2327	0.5	0.4	92.2
Chile	15.8	682	1203	0.1	1.9	176.4
Egypt	67.6	1130	1548	0.2	0.2	137.0
Indonesia	214.7	59	207	-	-	350.8
Pakistan	148.4	235	282	0.1	-	120.0
Bangladesh	138.1	95	177	-	-	186.3
Nigeria	136.5	886	332	0.2	0.1	37.5
world total	6272.5	466,419	649,795	100.0	100.0	139.3

* Articles from the USSR was 31,625 in 1988, 6.8 per cent of world output. The number of articles from Russia declined from 21,612 (3.8 per cent) in 1994 to 15,846 (2.4 per cent) in 2001. n.a. = data not available. Source: NSF (2006); World Bank (2006) shading = OECD group

The global role of English

English is now the only global language of research and publication. The erstwhile world-wide roles of Latin, French, German and Russian appear to have declined, though French retains its importance in Francophone Africa, and German continues to be quite widely known in university circles in some Asian nations such as Japan and Korea. Arabic is a common medium of academic discussion in many nations, and Spanish is an important regional language in Central and South America. Nevertheless, in an increasing number and spread of higher education institutions throughout the world, academic faculty have formal or informal incentives to publish in globally-recognized journals, meaning English language ones.

‘It is English that stands at the very centre of the global knowledge system. It has become the lingua franca par excellence and continues to entrench that dominance in a self-reinforcing process’ (Held et al. 1999, p. 346; Crystal 2003). English is spreading as a medium of instruction in non English-speaking nations, particularly in programs designed to attract foreign students. It is widely used in India and the Philippines. In Malaysia, it has been reintroduced in the school sector and is dominant in the growing private tertiary college sector. Within Europe, English is increasingly used as the language of instruction in selected programs, especially those at Masters level targeting students from Asia. Nations where English is widely used in such higher education programs include the Netherlands, Finland, Germany, Iceland, Sweden and Denmark. Japan also provides about 80 English language programs (OECD 2005a, p. 255). And as a second language English is much more widely used throughout the academic world. For example a survey of 1998-1999 ERASMUS teachers and coordinators found that almost 90 per cent of those from non English-speaking countries spoke English. The second language, French, was spoken by less than half the respondents (Enders & Teichler 2005, p. 101).

Within global patterns of translation, works originating in English appear to enjoy special status. Books in English are much more likely to be translated into other languages than the other way round (Held et al. 1999, p. 346). Here academic publishing is no different to other publishing, again suggesting a degree of cultural insularity in the English-speaking nations. These factors together mean both that knowledge conceived and discussed in English enjoys an undue status viz a viz all other knowledge; and that academic work of social and scientific importance does not enter the common global knowledge circuits, with incalculable consequences for economic and social development and for human rights. This lacuna must be considered a serious weakness in world-wide higher education as it has evolved to this point.

Global people flows, market competition and global hierarchy

For the most part global flows in higher education can be observed on an empirical basis, though the tools for doing this are only partly developed. For example the global flows of people in higher education include students involved in short-term exchange; first degree and professional Masters students accessing foreign degrees or involved in cross-border joint degrees; doctoral students; post-doctoral researchers; academic faculty involved in teaching, research, conferences and seminars and other forms of collaboration and exchange; administrators and executives on short-term visits for negotiating agreements with other universities, or learning about other systems, or marketing degree programs; academic or non-academic staff involved in offshore provision, and so on. Some global flows are already accessible to systematic data collection and in the case of certain flows such as the movement of students into foreign degree programs; the data are widely collected and are accessible to comparative analysis (OECD 2005a, pp. 250-273).⁴

Cross-border student movement

Between 1998 and 2003 the number of cross-border students entering OECD nations rose by 48.9 per cent. In 2003 there were 2.117 million in the main exporting nations (OECD, 2005, p. 273), just over 1 per cent of all people living outside their country of origin. Of these cross-border students 46 per cent travel from China, India and other Asian nations to OECD nations; mostly English-language education systems, and mostly to study for globally portable qualifications in business, computing and intensive English. Later many migrate to the nation of education. The second largest group of cross-border students (29 per cent) is moving within Europe (OECD, 2005, p. 257). In 2003 the leading exporters were the USA (28 per cent of cross-border tertiary students), the UK (12 per cent), Germany (11 per cent),⁵ France (10 per cent), Australia (9 per cent) and Japan (4 per cent) (Figure 1; OECD, 2005, p. 253). In higher education, the rhetoric of 'internationalisation' norms global engagement as two way flows premised on mutual cultural respect. The reality is different. Global competition in degree programs is an export-import market in positional goods, characterised by uni-directional student flows and asymmetrical cultural transformations. Where global flows in higher education take the form of global markets, on the whole the effect is to strengthen the existing hierarchy in higher education, especially the hierarchy between nations.

There are three broad domains of cross-border student movement in higher education (OECD, 2004a). First, there is the student movement between OECD nations, especially in Europe. Many are on short-term exchange. Most pay less than full cost fees, and aside from those entering the USA nearly all return to their nation of origin. This kind of student exchange has no necessary implications for global hierarchy. The high degree of cross-border activity in Europe demonstrates that global mobility is not necessarily market-driven and can be practised

in more reciprocal fashion. Likewise, though the national Japanese higher education system itself is highly competitive and largely privatised, the Japanese government treats foreign education as a means to learning and internationalisation, rather than as revenue-generating business (OECD 2004a); and student flows out of Japan are balanced by those coming in, mainly from China and Korea.. However the second and third kind of cross-border movement entails the export of higher education from largely English-speaking nations to the emerging and developing nations. This export industry, much of which is commercial in character, both rests on global inequalities and tends to perpetuate them. Within the global market, American higher education has a magnetic attraction. Research on student choice identifies strong and almost universal demand (e.g. Mazzarol et al 2001), especially for the elite US universities.

Second, then, students from emerging nations, especially in Asia, enter the English-language nations (71.6 per cent of all Asian international students in 2001), Western Europe and Japan. Global competition in degree courses in higher education is largely centred on these students. Numbers are growing most rapidly where cross-border education is a commercial business with full-price tuition, for example the UK and Australia. Foreign students, who are mostly self-financed, invest in global positional goods that facilitate mobility and changing identity. Many graduates enter mobile occupations such as business, IT and scientific research where English-language skills are used. The positional goods include not just foreign degrees themselves but foreign language, the experience of living abroad, and access to migration: all English speaking nations encourage foreign graduates to migrate.

Third, foreign education is conducted on the terrain of importing nations, in two forms that are also growing rapidly. One is foreign branch campuses in Singapore, Malaysia, China and elsewhere, mostly offered by local private partners; though some British, US, Australian and French institutions have established their own campuses. The other is distance education, largely online with links to local study centres. Foreign online distance education has not grown as rapidly as English-language corporations and universities expected. ICT capacities are narrowly distributed outside the OECD. Export nations have yet to design curricula linguistically and culturally tailored to non English-speaking populations. Online degrees do not have equivalent status with face-to-face degrees (Marginson 2004b).

The world doctoral market and the pull of the USA

In 2003 the UK had 23,871 foreign doctoral students, Spain 11,765, Australia 8855, Switzerland 6028 and Sweden 3205 (OECD 2005a). The role of these nations in foreign doctoral education is dwarfed by that of the USA where 102,084 foreign doctoral students were enrolled in higher education in 2004-2005 (IIE 2006); 18.1 per cent of all foreign students in HEIs were doctoral, rising to 30.8 per cent in research-intensive universities (IIE 2006). This underlines the exceptional character of cross-border education in the USA, and of the US role as the world doctoral school: 102,084 doctoral students is *much* larger than the *domestic* cohort of doctoral students in almost every other nation. Three quarters of those foreign doctoral students receive scholarships or other subsidies, mostly from the American universities (IIE 2006). Foreign students make a key contribution to American doctoral universities as research and/or graduate teaching assistants.⁶ As in many other nations⁷ the proportion of US doctoral graduates who are foreign-born has grown. Between 1977 and 1997 the foreign share of American PhDs rose from 13.5 to 28.3 per cent. In mathematics and computer science it rose from 20.2 to 43.9 per cent, in engineering from 32.1 to 45.8 per cent (Guellec & Cervantes 2002, pp. 77-78). About half the foreign doctoral graduates stay in the USA after graduation, many in faculty positions, augmenting the capacity of the United States

as a global knowledge economy. The remainder return to their nations of origin, or migrate elsewhere, carrying with them familiarity with American norms in higher education that are thereby broadcast throughout the world.⁸

Global competition for researchers

Altbach finds that ‘the most visible impact of globalization is the emergence of a worldwide market for academic talent, stimulated in part by the large numbers of students who study abroad’. He also remarks also that the global faculty labor market and doctoral student flows ‘are overwhelmingly a South-to-North phenomenon’ (Altbach 2002, pp. 7-9). However, while there is a global element in the faculty labor markets, it has not wholly subsumed national labor markets into a single worldwide set of regulations, salaries and conditions. Nor is there a global pool of labor is common across the whole ‘North’. Rather, a relatively small sized global tier has been imposed on top of the national labour markets where the great majority of faculty continue to be employed. The global labour market is comprised by highly mobile researcher/scholars and is led from the ‘Super-league’ universities which are largely from the USA. US higher education provides a large pool of opportunities that is internally diverse and stratified. Here the position of the USA in higher education is qualitatively different to that of the other nations of the ‘North’, all of which face potential net brain drain to the USA themselves. The scale of foreign doctoral education and the recruitment of foreign faculty in the USA, combined with the US-led and dominated global competition for high quality academic labor, has long term transformative implications in every other national labour market. For example, as well as Germany losing many doctoral graduates in the USA and UK, its own standing as an attractor of foreign faculty and doctoral students has diminished. Berning (2004, p. 177) remarks that while German research universities are seen as uniformly good there is a lack of the highest prestige ‘centres of excellence’ found in the USA, and

German study courses and degrees have lost part of their former international reputation. This is mainly due to the worldwide expansion and adoption of the Anglo-American HE system, its courses and degrees, but not to a lack of scientific quality in Germany. The consequence is a loss of foreign students from countries close to Germany but now following the Anglo-American mainstream (e.g. East Asia, Turkey). The loss of foreign students may cause a loss of young scientists from abroad too. Within the frame of the Bologna process HE institutions in Germany try to gain back that intellectual power by introducing new study courses and degrees, sometimes by English as a teaching language, and by internationalizing all academic activities (Berning 2004, p. 177).

In the wake of global rankings (see below) elite university researchers find themselves in a stronger bargaining position. Stratification of personnel in higher education has many roots; epistemic, economic, social and regulatory; including market competition within systems, government funding regimes, performance management and the growth of commercial science. It is not determined solely by globalization. Global factors interact with the other elements. But it is significant that the main force driving elite researcher mobility is the large open American system, which is also characterised by a relatively high degree of labour deregulation, individual bargaining and variation in salaries and remuneration. In some countries governments, HEIs and faculty unions will find themselves under pressure to facilitate the differentiation of salaries which had previously been held in a roughly equal position across fields and between individuals at the same level regardless of merit.

In the market for research labour there is a salary hierarchy to match the hierarchy in research performance and economic resources. In 2003-2004 the average salary at American doctoral universities for full professors for 9-10 months of the year was \$100,682, and average total compensation was \$125,644, rising to \$152,540 in the independent private universities. US academic faculty also have earning opportunities during the summer break. There are greater rewards at the peak of the American system: 6 per cent of full professors earned more than USD \$200,000 in salary alone in 2003-2004 (Academe 2006). By comparison Enders and de Weert (2004c, p. 18) note that the annual income of European professors ranged from 55,000-60,000Euro in the Netherlands and Germany to 40,000-50,000Euro in France, Finland, Spain and Italy, down to 13,000-20,000Euro in Greece and Eastern Europe.⁹ A number of Asian nations now approach or exceed European salary levels. In relation to Singapore Lee (2002a) remarks that 'the recently revised salary scales are internationally competitive and rank among the highest in the region'. Professors earn from USD \$82,800 to \$117,000 per annum and are on par with the USA, except at top end of the American profession. Singapore has set out to create a cosmopolitan globally competitive higher education system. Almost half of its faculty are expatriates from other nations.¹⁰ By contrast, in Argentina in 2001, the annual salary of the small minority of full professors paid full-time varied from USD \$12,492 to \$27,084 depending on seniority (Marquis 2002, p. 69). In many emerging nations salaries are lower and a full-time academic salary cannot support a middle class standard of living. Working in two jobs is common, reducing the time for research (Altbach (2002, pp. 18-19).

While salaries, opportunities for non salary earnings, good research infrastructure and American career opportunities are not the only factors that determine work satisfaction¹¹ all else being equal they constitute a significant set of incentives particularly for younger foreign researchers. Eventually, perhaps, all national systems that aspire to front rank research performance will have little choice but to offer competitive salaries and conditions of work or face the loss of too many personnel to HEIs in the USA and other systems such as that of Singapore that are prepared to offer American salary levels and supporting research infrastructure. The growing role of the global pool of researchers centred primarily on American higher education, and privileged viz a viz national systems and the majority of faculty whose work is centred on teaching, may also encourage fragmentation of the teaching-research nexus and the relative expansion of research-only positions. There are some signs of this already, for example in the UK (Enders and de Weert 2004c, 24).

Global asymmetries

The data on capital flows and the flows of research personnel in global higher education emphasise its asymmetry. In 2001 the USA took in \$11.5 billion from foreign students, and Australia \$2.1 billion. Few of their students went abroad (US \$2.4 billion, Australia \$0.4 billion) and these nations spent little on foreign aid for post-secondary education (US \$111 million, Australia \$13 million). The net capital flows were almost \$9 billion in favour of the US and \$1.8 billion in Australia. As noted, the majority of doctoral students from emerging nations, and some OECD economies including the UK and Germany, have 'firm plans' to stay in the US after finishing their studies. Of the 1996 PhD graduates in Science and Engineering, 96 per cent of those from China and 86 per cent of those from India were still in the USA in 2001 (OECD, 2004a, pp. 32, 281 & 286; Tremblay 2002, p. 44). In comparison, few American doctoral graduates 'brain drain' to the emerging and under-developed nations. The often repeated argument that there is 'no such thing as brain drain' and instead there is 'brain

circulation' must be taken with a large grain of salt in relation to those developing nations where the movement of talented scholars and researchers is almost all one way.

Inequality between research universities and between nations; and the often uni-directional flows of people, capital and knowledge associated with those inequalities; are necessary to global competition. Export nations benefit from the absence of higher education capacity in emerging nations, and the deflated value of higher education places in those nations. English-language nations benefit from the dominance of English. This global hierarchy is not necessary to research collaboration or non-commercial student exchange as the heavy student traffic in Western Europe demonstrates. But without such a global hierarchy there would be no difference in the relative advantage offered by different degrees around the world, no global markets and hence no world-wide competition in and through higher education.

Two-tier structure of the global market

The worldwide map of research performance, now ordered in a unitary competition, combined with the growing market in cross-border degrees, together comprise a two-tier market competition at global level, so that global flows tend to perpetuate the Bourdieuan hierarchy in the field (Marginson 2006). The two tier structure of the global market powerfully reinforces US hegemony, which is nested in the first tier.

The first tier is the 'super-league of global universities' as described by The Economist (2005), high value, highly exclusive, mostly in the United States and a few in the UK. In a networked environment these leading universities are overwhelmingly visible. They cut a powerful presence as ideal-exemplars and as practical leaders of the sector, able to draw high achieving academic staff and doctoral students from across the world. While only a small number of foreign students access these universities they have great symbolic power. Their degrees and research carry exceptional credibility. The leading group are household names: Harvard, Stanford, Berkeley, MIT, Caltech, Columbia, Princeton, Chicago, Yale and Cornell in the US and Cambridge and Oxford in the UK. These institutions do not expand to meet potential demand or establish franchises across the world in the manner of capitalist businesses. Maintenance of the value of positional goods depends on their continued scarcity. The super-league universities compete with each other for the best researchers and doctoral students, and for national and global leadership; they gain prestige from their role as global demand magnets (though this is less important to them than the status they derive at the peak of domestic US/ UK demand); and they benefit from the contributions of bright foreign graduate students to research and teaching. Outside the USA/UK, the worldwide market does not replace the national markets, it subordinates them. Above the national competition it layers an additional stratum of student places with superior positional value to all places at national level. Global positional value is formed in the same manner as value is formed in national competition, via a combination of degree/brand status and research performance/reputation. Strong research universities are also strong attractors of foreign students.

The second tier is the much larger group of institutions of lesser status in the nations exporting higher education. Like national competition in higher education, global competition is powered by an elite/mass dualism created by the exclusionary logic of a positional market. The two hierarchically-ordered segments are relatively stable. In the upper tier Segment 1 (elite foreign higher education) students compete for and invest in scarce status goods in sought-after universities. In the table the second tier is divided between segments 2 and 3. The subordinated Segment 3 (mass foreign higher education) is revenue driven, expansionary and

often commercial. Between these segments is an unstable differentiation of intermediate institutions, from example the less prestigious research universities in Segment 2 (Table 3).

Table 3. Segmentation of global competition in higher education

Segment 1 World market of elite universities	The American doctoral sector and the high prestige universities in UK. Prestige not profit-driven. Prestige rests on research reputation and global power of degree.
Segment 2 Exporting national research universities	Research universities in the UK, Canada, Australia, Europe, Japan. Prestige-driven at national level but often run foreign degrees as a profit-making business.
Segment 3 Teaching-focused export institutions	Lesser status institutions in the export nations, operating commercially in the global market, catering to a lower cost/ lower quality echelon of foreign education.
Segment 4 Nationally-bound research universities	Prestige providers within a single nation, normally research intensive universities. Nationally competitive with Segment 2 (but not 1), minor cross-border role.
Segment 5 Lesser status national/ local institutions	Confined to national competition and local demand. No cross-border role. The largest group of institutions, especially in importing nations.

II. Hegemony in global higher education

In the global field of higher education individual institutions and national systems interact in an uneven set of power relations. These relations of power take place on three profoundly interrelated dimensions (Lukes 1974):

Institutional centrality, strength and prestige. At the instrumental level (Weber 1946, Mills 1956, Domhoff 1967), some institutions and national HE systems exercise power over others through the accumulation of financial resources, the strength of their faculty and student bodies, the potency of infrastructures, the global centrality and position of their base country as well as their closeness to financial and political, national and global, decision-making centres, among other factors. The strength of individual or institutional actors participating in the elaboration of higher education policies at supranational agencies like the World Bank, OECD, IADB or UNESCO is a manifestation of instrumental power within the global field of higher education.

Shaping and controlling higher education agendas. At the decision (or non-decision) making level (Bachrach and Baratz 1970), institutions and systems exercise power through process rather than structural conditions and position. It is expressed through the control of agendas as well as policy debates and policy design. Direct instrumental power, coercion (threat of negative sanctions or use of positive incentives) and invocation of existing biases (norms, precedents, rules or procedures) are that shape power relationships at this level. A

contemporary example of agenda control in education is the prevalence of evaluation, standardization and accreditation policies at a world-wide level.

Framing the field and constructing the dominant views of higher education. The third, and probably most relevant, level in the exercise of power within the field of higher education is the construction of dominant shared views, accepted notions and discourses, that is, the real of hegemony (Gramsci 1970). Central institutions in the core countries exercise power through the shaping of widespread understanding of the nature and role of higher education, by defining what is acceptable and desirable in higher education and, in this way, framing the field, the relations of power, the conditions of interaction and the terms of competition.

The nature of hegemony

While the notion of hegemony has been used by different authors, Gramsci (1970) provided us with a most powerful analytical and explanatory concept. Hegemony is understood here as a function exercised by the dominant groups throughout society based on:

the “spontaneous” consent given by the great masses of the population to the general direction imposed on social life by the dominant fundamental group; this consent is “historically” caused by the prestige (and consequent confidence) which the dominant group enjoys because of its position and function in the world of production (Gramsci 1971, p. 12).

According to Gramsci, hegemony is founded on a social construction, in the realm of intellectual reason and ideas, shaped by dominant groups based, and at the same time framed, by their structural and instrumental position of power in society. Following Gramsci Raymond Williams explained that hegemony therefore is:

an order in which a certain way of life and thought is dominant, in which one concept of reality is diffused throughout society in all its institutional and private manifestations, informing with its spirit all taste, morality, customs, religious and political principles, and all social relations, particularly in their intellectual and moral connotations (Williams in Miliband 1973, p.162).

Consequently, hegemony, in the global field of higher education, is the process through which powerful higher education institutions and national systems are able to shape a dominant view, a concept of the reality, nature and characteristics of emblematic colleges and universities. In the case of the emerging global field of higher education, the concept is diffused in society and all its institutions -specially within higher education systems, organizations and actors- at the world wide level.

Hegemony in higher education

5. Model(s) of university and university system associated with US (US/UK?) hegemony. Idealized private university version of US practices. How these norms gain purchase throughout the world (in association with economic policy, as policy models, World Bank requirements, etc)

Normalising competition and Anglo-American domination

There is no lack of empirical evidence for the dominant role of the United States in higher education and in cross-border relations in higher education, and the quantitative importance of the Anglophone nations taken together. As noted above, according to the Shanghai Jiao Tong University data, 53 per cent of the top 100 research universities are in the USA and 70 per cent in the English-speaking world. The USA has a remarkable 17 of the leading 20 research universities. The USA enrolled 565,039 foreign students in 2004-2005 (IIE 2006), a decline of 1 per cent from the previous year. Foreign students in the USA constituted just 3.5 per cent of the large US higher education system in 2003 but this was 28 per cent of the global market in cross-border degrees, by far the largest market share in the world. English speaking nations between them enrolled more than 50 per cent of all border-crossing students (OECD 2005a, p. 254). And the USA alone educates more than 50 per cent of mobile doctoral students.

In *Globalization in the Asian Region* (2004) Gloria Davies and Chris Nyland note that ‘the military, economic and cultural power of the US has shaped the future of globalization in both direct and indirect ways’ (Davies & Nyland 2004, p. 14). To world-wide American power is joined the secondary global role of the UK in the spheres of culture and language, governmental ideologies such as neo-liberalism, and education. To many working in higher education globalization appears simply as an American or Anglo-American process. Here ‘Americanisation’ as such is not managed by the US government, but is constituted by the sum of the on-going cross-border dealings of American higher education institutions and faculty. These dealings are generally consistent with the broad thrust of American foreign policy, for example in relation to the mobility of foreign students, and reflect a surprising degree of cultural coherence in the interface between American HEIs and the rest of the world

The cross-border flows of students do not simply add a layer of mobile foreign students to the student populations of the nations that export education. In the context of Anglo-American domination, in which the USA especially is positioned as a superior destination, cross-border student flows re-position domestic university competition in all nations except one. In the age of global research rankings, traditional leading national institutions such as the University of Buenos Aires and the University of the Philippines have lost some of their old power to generate status. National stratification has been relativised by the new global hierarchy. The exceptional nation is of course the USA itself where the national hierarchy of institutions *is* the global hierarchy, globalization has minor local impacts, and American institutions are being strengthened world-wide both as models (see below) and in fact.

American universities dominate in the institution-to-institution networking which structures the communicative field of global competition and enables it to be imagined. Universities in the different world regions have partial linkages with other regions but are almost always linked to universities in the United States, which is the global communications and business hub (Castells 2001). Yet those same American universities scarcely think about the global field as such, which not surprisingly remains on the periphery of their vision. In the USA there is an intense domestic competition for top students, leading academic staff and research reputations; but global competition does not generate the same vigour. American global ‘exceptionalism’ in higher education is constituted not only by hegemony but also indifference and insularity. Doctoral universities could draw much greater revenues from foreign education but they define it more as foreign aid and cultural exchange than as a revenue raising project. American global hegemony in higher education is exercised without entrepreneurial marketing. It is sustained by American economic, technological, cultural and military power.

American universities do not have to adjust their programs or cultural ambiance to attract international support. They do not sell an internationalized curriculum. Rather, they offer themselves as the global standard. Here the global transformations are all in one direction. Mobile foreign students are transformed by the US experience; but aside from a small number of specialist international programs, American universities are little touched. Globalization in higher education is what America does to the world, not what the world does to America.

III. The hegemonic model

The two idealized templates

In policy circles in the English-speaking countries the UK, Australia and New Zealand; and also in Eastern Europe, Central Asia and much of the developing world; real life national systems and institutions are habitually measured against two idealized templates or models of higher education. Both models have been constructed from a reified understanding of higher education in the United States. These models are influential, to a lesser degree, in Western Europe, in some States of the USA, and in certain emerging Asian higher education systems such as those of China and Malaysia. To the extent that they enter policy thinking in the developing world, and the transition economies, it is often via the terms of World Bank loan agreements that have been designed to secure reforms in national higher education systems. To the extent that the models are influential in nations with more robust nation-states and more developed higher education systems, it is because these models have come to operate as powerful global norms that inspire parallel similar reforms across the world.

The two models are as follows:

- The high status not for-profit private research-intensive university: student selective, with high tuition and high aid, raising significant income from donations, and competing with similar institutions for the best students and staff. The prototype is derived from the American Ivy League;
- The for-profit vocational institution, focused on broad-based vocational training in business studies and possibly also in such fields as technologies, health and education: expansionary, spare and efficient with no academic frills such as research, and 'customer'-focused using performance management of staff and quality assurance measures. The prototype is derived from recently developed commercial vocational institutions, above all the University of Phoenix.

Although four fifths of US higher education is in the public sector, neither model fits the public institutions: the comprehensive public research university, and the four-year and two-year colleges. Nevertheless, measured against the normative models, the actually existing public institutions look flawed. Compared to the high status private universities the public research universities appear as lower in status, contaminated by their democratic mission, whereby they are expected to expand access rather than merely intensive selectivity. Compared to the commercial sector, the public research universities appear inefficient and under-focused, with less interest in the 'customer', thus losing their democratic credentials.

Institutional reforms implied by the first template include higher tuition and greater selectivity, and focus on business-university linkages in research. Institutional reforms implied by the second template include standardised teaching, curriculum packaging, line management of

faculty according to performance targets, the abolition academic freedom, and intensive marketing. Curiously, in the design of policy reforms outside the USA elements of the two are often mixed, for example in research universities, modernised executives at institution and academic unit levels will be expected to adopt both business models of administration and competition on the basis of research excellence. At system level the implications include government regulation and steering based on competition for funds; the use of quasi-markets rather than direct political intervention; student vouchers so as to foster a choice-based market; a mixture of public and private institution, and mixed public and private funding with commercialization in selected areas such as foreign students or research; the fostering of professional executive leadership and the weakening of the faculty element in governance; performance accountability of institutions, and within them the performance management of their staff; and whole-institution forms of quality assurance, which emphasize managerial rather than academic values. At the global level, the templates are consistent with the WTO/GATS imagining of world-wide higher education as exclusively a trading environment, whereby even non-profit elite universities become commercial institutions once they cross the national border, and where states and public goods are absent (despite the fact that in many nations and HEIs, the non trading global flows are more significant than the trade flows).

There is an irony here: in many respects US higher education itself does not fit the templates. It is often highly politicized. The majority of funding derives from public subsidies and non-market private sources. The federal system of student loans creates a quasi voucher, but this is hardly a student driven market. Though student demand signals prestige in the leading universities, given excess demand they do not need to reshape themselves to student needs. In US institutions there is less use of competition in resource allocation than in the UK and Australian systems which have been ostensibly reformed along American lines. But the fact that the template does not fit in the USA does not impair its normative power.

According to the *Economist* (2005) the lessons of American success are to diversify income sources in quasi-corporate universities, reduce direct government intervention, and foster diversity and competition to produce an institutional hierarchy. The 'sell' is the prospect of building stronger, corporate-sexier research universities within a more differentiated system. Every nation wants to have its own Harvard; even though none can replicate the domestic conditions that have made US higher education so powerful. Taken together, these reforms foster more competitive and vertically differentiated higher education systems (in that respect at least, resembling real-world US higher education), with definite winners and losers among both the institutions and the students. They provide favourable conditions for the part commodification of higher education, and its subordination to the specific requirements of business and industry, and the reduction over time of government subsidies to institutions. Further, by pushing all institutions towards a common model or common models, they draw them towards a single system in which all can be readily compared to each other, even while each appears as inferior to institutions in the hegemonic US heartland. Thus the reforms assist the subordination of institutions outside the US. While there remain differences across countries, there has been a partial convergence in the directions suggested. Models more heterogenous to the global norm, such as the government-funded technical universities in Germany and the high participation national universities in Latin America, are under pressure.

How the dominant model is reproduced: educational monoculture

This process of normalisation is smoothed by the particular Anglo-American approach to competition and cooperation, and to culture, language and cultural diversity.

The distinctive American approach to competition and markets, and a mixed public/private system in which the for-profit sector is an alternative to state-subsidised provision, have profoundly affected the kinds of messages and practices that American HEIs take into the global field. Institutional diversity is tolerated providing it follows the established tracks. Cultural diversity and genuine organizational innovations are less popular. American, and also British universities and their personnel are more sanguine about monocultural and monolingual environments in higher education than their counterparts in many other nations. In one respect this is explained by simple pragmatics: given the worldwide dominance of US and UK universities in a networked sector, while HEIs in other nations have little choice but to acknowledge English-language outputs, English-language HEIs and their personnel do not face the same global imperative to acknowledge the other. But there are also differences in economic philosophy. In the Anglo-American nations, except bilingual Canada perhaps New Zealand, logics of size and competition subordinate considerations of cultural diversity. 'Diversity' is understood in social rather than cultural terms, or as a limited multiculturalism within a dominant monoculture, for example the access of non dominant groups to higher education. A fuller global diversity is not seen as an essential goal in itself. This facilitates uniform systems. Daniel Drache and Marc Froese (2005) summarise the differences between Anglo-American and European outlooks as follows:

The European Union looks to build linkages and networks between state regulatory policy, Brussels and cultural producers. This tripartite approach is difficult at the best of times, but it has been quite effective nonetheless. The EU is linguistically and socially diverse and its internal stability depends on a pluralistic approach to the global commons. It regards freedom of expression as important to protect as part of its commitment to the social market.... The Anglo-American model is sharply contrasting in its regulatory and market dimensions. It should be noted that despite the fact that Britain is a member of the EU, its elites share many ideas with their American counterparts. Simply put, this model values diversity as a function of competition and not the other way round. Consumers choose their cultural diet from a buffet of options. And just like many buffets, portion size is more important than quality and breadth of profits (Drache & Froese 2005, pp. 26-27).

In commercial cultural industries, 'the Anglo-American model requires super-size profits and relies on regulators to create an environment conducive to corporate growth... In contrast, policy makers in the EU understand that the culture/trade interface cannot be one-dimensional and trade must accommodate diversity, not the other way round' (Drache & Froese 2005, p. 27). Likewise an aggressive volume building approach is evident in British and Australian approaches to the foreign student market. It is not evident in the US doctoral universities, where revenue-raising from the education of foreign students is subordinated to foreign policy objectives and the need for graduate student labour. However a common approach to cultural diversity is apparent in all three Anglo-American nations.

Although American higher education is very powerful in its globalizing effects in the systems and institutions of other nations, the reverse is not the case. Higher education in other nations has little impact in the USA. In that sense most American HEIs are not very globalised; their cross-border dealings are classically international rather than global in character, being largely marginal to day-to-day operations. The Carnegie survey found that whereas more than 90 per cent of scholars from other nations believed that it was necessary to read foreign books and journals, only 62 per cent of American scholars agreed (Altbach 2005, pp. 148-149). American scholars and students cross borders less than most of their counterparts. Philip

Altbach remarks that though American scholars are ‘at the centre of the world academic system’, and this ‘imposes special responsibilities on them’ (p. 150), and despite the fact that American universities are relatively sophisticated in the technologies of data retrieval, with the USA constituting the world’s largest single pool of broadband Internet subscribers (Drache & Froese 2005, p. 16):

American academics do not often cite works by scholars in other countries in their research. The American research system is remarkably insular, especially when compared to scientific communities in other countries. A few, such as Singapore and Hong Kong, make it a priority to hire scholars from abroad, frequently from the United States, precisely to ensure an international perspective. The American system accepts scholars and scientists from abroad, but only if they conform to American academic and scientific norms (Altbach 2005, p. 149).

Though there are many individual exceptions to these generalisations, and though scholarly parochialism is not confined to the USA, what makes the pattern of insular globalization and one way flows remarkable is the global weight of American higher education.

How the dominant model is reproduced: global rankings

The last three years have seen the emergence of a highly effective normative tool that both constitutes the global field as a field, while locking down the global hierarchy within it. That is global university rankings. Global university rankings cement the notion of a world university competition or market capable of being arranged in a single ‘league table’ for comparative purposes and provide a powerful impetus to intranational and international competitive pressures in the sector. The rankings take two forms: the research rankings devised by the Shanghai Jiao Tong University, which reinforce the template of the Anglo-American research intensive university; and the reputational rankings devised by the *Times Higher*, which simply perpetuate the already strong global position of the UK research universities.

Global comparisons are possible only in relation to one model of institution, that of the comprehensive research intensive university. This model of HEI is the only one sufficiently widespread throughout the world to lend itself to the formation of a single competition. Even so, across the world there is nevertheless significant variation in the size and scope of leading research universities, which range from small establishments focused on graduate education and research to large access-based national universities of 200,000 or more. The rankings devised thusfar have tended to favour the former kind of university rather than the latter. In this and other ways, such as the reliance on English language research literatures, the rankings systems are loaded in favour of some universities and systems at the expense of others. Any system of rankings is purpose-driven, with outcomes shaped by the assumptions and values built into the methods of comparison and calculation. In that sense all rankings systems are both incomplete as a description of the reality of higher education (for example the performance of a nation’s research-intensive universities says nothing about the performance of its specialist business schools or its technical training institutes) and contain in-built bias. This does not rob rankings of their power, however.

The most globally influential global rankings are those prepared by the Shanghai Jiao Tong University, first issued in 2003. The rankings by *The Times Higher*, was first published in 2004. These rankings were intuitively plausible because they confirmed the reputations of the leading American and British universities, the household names such as Harvard, Stanford, Yale, Berkeley, MIT, Cambridge and Oxford. The *Economist* (2005) cited the Jaio Tong group as the ‘World Super-league’. Table 4 lists the top 20 universities as determined by each

of the Shanghai Jiao Tong University and the *Times Higher*. The *Times Higher* ‘Super-league’ is the more plural of the two, with 12 American universities in the top 20 rather than the 17 in the Jiao Tong University table, four UK universities not two, and universities from four other nations (France, Japan, China and Australia) rather than one (Japan) in the Jiao Tong listing. *Times* places 21-25 are also held by universities from nations other than the USA and UK.

Table 4. The Global Super-league: the world’s leading universities as measured by the Shanghai Jiao Tong University, and *The Times Higher*, 2005

Shanghai Jiao Tong research university rankings			
	university	points	nation
1	Harvard U	100.0	USA
2	U Cambridge	73.6	UK
3	Stanford U	73.4	USA
4	U California, Berkeley	72.8	USA
5	Massachusetts IT	70.1	USA
6	California IT (‘Caltech’)	67.1	USA
7	Columbia U	62.3	USA
8	Princeton U	60.9	USA
9	U Chicago	60.1	USA
10	U Oxford	59.7	UK
11	Yale U	56.9	USA
12	Cornell U	54.6	USA
13	U California, San Diego	51.0	USA
14	U California, Los Angeles	50.6	USA
15	U Pennsylvania	50.2	USA
16	U Wisconsin-Madison	49.2	USA
17	U Washington (Seattle)	48.4	USA
18	U Calif., San Francisco	47.8	USA
19	Johns Hopkins U	46.9	USA
20	Tokyo U	46.7	Japan

<i>The Times Higher</i> university rankings			
	university	points	nation
1	Harvard U	100.0	USA
2	Massachusetts IT	86.9	USA
3	U Cambridge	85.8	UK
4	U Oxford	83.9	UK
5	Stanford U	83.4	USA
6	U California, Berkeley	80.6	USA
7	Yale U	72.7	USA
8	California IT (‘Caltech’)	71.5	USA
9	Princeton U	64.8	USA
10	Ecole Polytechnique	61.5	France
11	Duke U	59.1	USA
11	London S. of Economics	59.1	UK
13	Imperial College London	59.0	UK
14	Cornell U	58.1	USA
15	Beijing U	56.3	China
16	Tokyo U	55.1	Japan
17	U Calif., San Francisco	54.9	USA
17	U Chicago	54.9	USA
19	U Melbourne	54.5	Australia
20	Columbia U	53.9	USA

U = University; IT = Institute of Technology

Source: SJTUIHE (2006); Times Higher (2005)

The global rankings have secured great prominence in higher education, policy and public arenas; and have already had discernable effects in institutional and policy behaviours. While there has been some disquiet about the impact of the rankings and instances of critique of the

methods (particularly in HEIs and nations where performance was less good than expected), there have been few concerted efforts to discredit the rankings process, which appears to have secured policy credibility. Given this, research universities know that they must succeed within the terms of the measures. The rankings have generated a strong drive to improve position, particularly in the Shanghai Jiao Tong rankings which are seen as the more credible. Within national systems, the rankings have prompted desires for high ranking research universities both as a symbol of national achievement and prestige and as an engine of economic growth. There has been a growing emphasis on strategies of institutional stratification and concentration of research resources, some of which pre-dated the rankings. At the same time global rankings have stimulated global competition for leading researchers and the best younger talent. All of these responses have both cemented the role of the rankings themselves, and further intensified the competitive and normalizing pressures.

Shanghai Jiao Tong University rankings

The major part of the SJTU index is determined by publication and citation performance in the sciences, social sciences and humanities: 20 per cent by citation in leading journals; 20 per cent by articles in *Science* and *Nature*; and 20 per cent by the number of 'HiCi' researchers in the institution, researchers named in the Thomson/ISI classification of the leading 250-300 researchers in their broad field of study, of which nearly all are science-based disciplines, on the basis of citation performance (ISI 2006). Another 30 per cent of the index is determined by the location of the winners of Nobel Prizes and Fields Medals in mathematics, during their training (10 per cent) and in their current employment (20 per cent). The remaining 10 per cent of the index is determined by taking the total derived from the above data and dividing by the number of staff. As such the SJTU rankings favour universities that are large and comprehensive enough to amass strong research performance over a broad range of research fields, while carrying relatively few staff that are research inactive. They also favour universities that are particularly strong in the sciences, favour universities from English language nations because English is the language of research – non English language work is both published less and cited less - and favour universities from the USA because of nationally circular citation patterns: Americans tend to cite Americans. *Of the HiCi researchers, an incredible 3568 are located in the USA*, compared to 221 in Germany, 215 in Japan, 162 in Canada, 135 in France, 97 in Australia, 90 in Switzerland and 83 in the Netherlands. India has 10 HiCi researchers, mainland China 20. Among the US universities Stanford has 91 HiCi researchers, more than all the Swiss universities together; UC Berkeley 81 and Harvard and MIT each 72. There are 42 at the University of Cambridge in the UK.

Like the citation measures the Nobel Prize criterion also works in favour of a small select group of nations. David Bloom (2005, p. 35) notes that of the 736 Nobel Prizes awarded up till January 2003, 670 (91.0 per cent) went to people from high-income countries as defined by the World Bank, and a majority to people from the USA, with 3.8 per cent from the Russia/Soviet Union and Eastern Europe and 5.2 per cent from emerging and developing nations. People from the latter group had by far their best prospect of winning a Nobel Prize in Literature (10.1 per cent) or Peace (19.8 per cent), *but these areas are excluded from the SJTU index of research performance*. Further, of the nine scientists who originated from emerging or developing countries and who won Nobel Prizes in Chemistry, Physics, Physiology or Medicine, four were working in universities in the USA and two in the UK and Europe.

The Times Higher rankings of universities

The *Times Higher* are more blatant in their normative function. The *Times* claims to have provided a wholistic ranking of HEIs that is ‘the best guide to the world’s top universities’ (*Times Higher* 2005). The rankings appear to have been designed to service the market in cross-border degrees, in which many UK universities are very active. It emphasizes criteria relevant to that market, so boosting the UK sector. Thus a high value is placed on institutional reputation and on the level of ‘internationalisation’ of HEIs; and in the outcome the rankings tend to favour HEIs with a strong presence in the degree market. A total of 40 per cent of the *Times* index is comprised by an opinion survey of academics around the world, and another 10 per cent by a survey of ‘global employers’. There are two internationalisation indicators: the proportion of students that are international (5 per cent) and the proportion of staff that are international (5 per cent). Another 20 per cent is determined by the student-staff ratio, which is treated as proxy for teaching ‘quality’, and the remaining 20 per cent of the *Times* index is comprised by research citation performance.

The methodological emphasis on reputation tended to favour the best known universities in many nations. Along the way, the *Times* rankings boosted the number of leading British universities and reduced the number of US universities in the world’s top 100 from the 53 in Jiao Tong to just 31. However, the *Times Higher* rankings are open to a number of methodological criticisms. The two surveys are non-transparent: it is not specified who has been surveyed or what questions were asked. Reputational surveys are open to the charge that they often recycle reputation (Guarino et al. 2005, p. 149) rather than rewarding known quality, and degenerate simply into popularity contests. ‘Raters have been found to be largely unfamiliar with as many as one third of the programs they are asked to rate’ (Brooks 2005, p. 7). One problem here is that well known university ‘brands’ tends to generate ‘halo’ effects. One American survey of students found that Princeton was ranked in the top 10 Law schools in the country, but Princeton did not have a Law school (Frank and Cook 1995, p. 149). Further, the *Times* student internationalization indicator rewards supplier strategies of volume building, rather than the quality of student demand or the quality of programs. Teaching quality cannot be adequately assessed using a resource quantity indicator such as the student-staff ratio. Further by favouring higher education institutions active in the cross-border degree market, the *Times* rankings inflated the performance of Australian universities, which achieved no less than 12 universities in the world’s top 100. Canada, similar in many respects, achieved only three. Yet Canadian higher education, though weaker in the export market than Australia, is stronger in terms of system size, resources per student, the level of participation in higher education, and research performance; an anomaly resulting directly from *The Times* unsubtle attempt to manipulate the global university order.

In sum, the SJTU and *Times* rankings both reproduce and exacerbate the existing vertical differences in the higher education landscape. ‘The fact is that essentially all of the measures used to assess quality and construct rankings enhance the stature of the large universities in the major English-speaking centres of science and scholarship and especially the United States and the United Kingdom’ (Altbach 2006). Global engagement varies from university to university, but the potency of global referencing does not. Research is integral to the status of research universities, and research has become irretrievably global. Essentially, all universities are now judged in terms of two active frames of reference, the national and the global. The more an individual university aspires to the top end of competition, the more significant global referencing becomes. Above the national hierarchy in every nation now looms the American doctoral sector and the leading UK universities. Few people in each nation know the higher

education systems of other nations, but the peaks of global status are visible from everywhere. Though the national and global hierarchies are imperfectly integrated, they now constitute a single set of possibilities for a growing number of undergraduate students and their parents (they have long been seen this way by faculty and many graduate students).

Effects in non English-speaking nations

This has immediate, negative implications for the elite universities in every national system outside the USA/UK. They were once unchallengeable positional leaders in their own domain. But the nation is no longer solely their domain. There are leaks in the circular reproduction of status: many of their treasured clients are crossing borders and slipping from their grasp. Once globally referenced their research performance becomes less worthy and more significant. Suddenly, venerable universities become less attractive and more vulnerable. This affects the status of leading universities in nations such as Australia, where at least they can become global players in their own right; and also the leading universities in many emerging nations where national geo-strategic power is weaker and individual institutions often lack the capacity in research and communications technologies to make a ready transition to the global era. At the same time the rankings work their way into the outlook and behaviours of nations and institutions lower in the pecking order. This helps to keep them there. Rankings are a legitimating device that supports Anglo-American hegemony by installing in all others the assumption it is reproduced by merit. As Richard Johnson puts it in his Introduction to Bourdieu's *The Field of Cultural Production* (1993):

The educational system transforms social hierarchies into academic hierarchies and, by extension, into hierarchies of merit... Cultural capital thus participates in the process of domination by legitimizing certain practices as 'naturally' superior to others and by making those practices seem superior even to those who do not participate, who are thus led, through a negative process of inculcation, to see their own practices as inferior and to exclude themselves from legitimate practices (Bourdieu 1993, pp. 23-24)

[More from Imanol.....]

Voices outside the hegemony

The uniform reliance on English as the one academic global language is more driven by the weight of the Anglo-American bloc within world higher education, and the world economy, the cultural industries and the Internet, than by the demographics of language itself. As the Table shows, English is only one of the languages spoken by one billion people. The other is Putonghua ('Mandarin' Chinese). In addition two pairings of related and mutually intelligible languages are spoken by more than half a billion people: Hindi/ Urdu, and Spanish/ Portuguese. Another three languages are spoken over 200 million people: Russian, Bengali and Arabic. Another four languages have more than 100 million.

Table ##. Spoken languages with more than 100 million voices world-wide

language/ language group	number of voices (millions)

English	1000
Putonghua ('Mandarin')	1000
Hindi/Urdu	900
Spanish/Portuguese	450/200
Russian	320
Arabic	250
Bengali	250
Malay-Indonesian	160
Japanese	130
French	125
German	125

Source: Linguasphere Observatory (2006)

[Imanol to expand on the potential of Spanish-speaking universities, e.g. scholarship in the social sciences and humanities? Note that linguistic plurality is more essential in those disciplines than in mathematically-based fields; though it is also essential to all of the social and economic applications of science, e.g. agriculture, environmental studies, etc]

Alternatives to the hegemonic model

[Imanol – UNAM/ UBA, Nordic model?, etc]

[A suggested bit from Simon:]

Global public goods

[could go at end of this Alternatives section? Not essential, but does provide something positive so it's not all 'doom, gloom and hegemony']

In addition to these distinctive national and regional models of higher education, which constitute already existing alternatives to the Anglo-American template, there is also potential for enhanced and formalized cross-border collaboration in higher education, taking the form of global public goods in education and research. In the Anglo-American norming of world-wide higher education, as supported for example in the WTO-led trade liberalisation negotiations, the global setting is imagined solely as a global trading environment. National and cross-national regulation are assessed solely in terms of their potential to affect flows of goods and capital. But this is a radical reduction of higher education, in which global trade is one part but not the main part of cross-border relationships; and part of the decision-making about global flows takes place in governments or at least is framed by the public interest.

Higher education produces a complex mix of private and public goods in both national and global dimensions (Marginson forthcoming A). The plurality in the goods produced in HEIs derives in part from the intrinsic nature of information and knowledge, which constitute 'public goods' in the technical economic sense, whether they are produced in public sector

institutions or not. As defined by Paul Samuelson (1954) ‘public goods’ (including services) are goods that are non-rivalrous and non-excludable.¹² Knowledge, especially basic research, is an almost pure public good (Stiglitz 1999). As Samuelson also noted, public and part-public goods tend to be under-provided in economic markets. Yet such goods are central to the workings of advanced economies, societies and polities. An immense array of information and knowledge generated in HEIs, especially basic research, is openly accessible and subject to nominal charges well below its use value. The volume of freely exchanged knowledge in the public domain far exceeds that of tradeable intellectual property. Information and knowledge are also highly mobile, readily slipping across borders, so that the cultural sphere of higher education, in which research and information are produced, is actually more globalized than the economic sphere where only about one fifth of production in national economies enters cross-border trade. At the same time public higher education everywhere is subject to public intervention and to subsidized production. The fact that much of the work of HEIs is both relatively global in character *and* is subject to market failure, public subsidy and political regulation contradicts assumptions that globalization is necessarily market driven.

Global public goods are goods that have a significant element of non-rivalry and/or non-excludability and are available across populations on a global scale. They affect more than one group of countries, are broadly available within countries, and are inter-generational; that is, they meet needs in the present generation without jeopardising future generations (Kaul et al. 1999, pp. 2-3). Global public goods in higher education include collective global goods, and also positive or negative global externalities. Collective global goods are obtained by nations and/or institutions from cross-border systems common to the world or a meta-national region, for example regulation, systems and protocols that improve cross-border recognition and mobility; such as the Washington Accords in Engineering, and the Bologna Declaration’s higher education space. Global externalities arise when education in one nation affects significant numbers of people in other nations; for better, for example the positive contribution of research flowing across national borders; or for worse, for example the net ‘brain drain’ of national faculty. In their positive form, like other public goods, global public goods tend to be under-provided in markets. Multilateral forums can directly create such global public goods, for example collective world-wide recognition systems and academic freedom protocols, and UNESCO, the OECD (2004b) and EU have all advanced the discussion of these elements. Cross-border externalities are more difficult to regulate. There is no agreed basis for identifying, measuring, costing and financing ‘downstream effect’s between one nation and another even in the sphere of the environment where such effects are acknowledged. In higher education, though brain drain is an acknowledged issue, for the most part aspects of brain circulation and research flows are yet to become the subject of national decision-making, costing or multilateral consideration. Like national public goods, global public goods tend to be under-recognised in national policy making and political debate. Here a principal constraint is that there is no global policy space in which to consider global public goods.

At the same time, global public goods are not universally beneficial or virtuous. They can take many different configurations, some of broader global benefit than others. Global networks include but can also exclude. As noted, the global communications and knowledge system is dominated by the English-speaking nations, particularly the USA, and valorizes the English language, while marginalizing knowledge, ideas and information in all other languages, and from all other cultural and social zones. In general, developed nations have a superior capacity to access both global private goods and global public goods in higher education. They contain more people with the ability to pay for global private goods as foreign degrees or commercial

intellectual property. They contain better research infrastructures and more trained personnel able to utilize research knowledge and turn it into technology transfer. We should ask the question ‘*whose* public goods?’ For nations with mature academic cultures of their own such as those working in Spanish and Arabic, the world-wide extension of academic discourse on a hegemonic generates public goods (it opens up a larger set of knowledge) *and* public bads (it reduces their own traditions and narrows the totality and variety of global public goods overall. The loss of diversity damages not just these nations but all nations, including English-speaking nations. All have an interest in the variety and fecundity of knowledge. Cultural diversity is as valuable to higher education as is species diversity in the natural world.

One practical example of the potential for the collaborative production of public goods, and one that facilitates mobility and diversity in the common interest, is enhancement of the conditions experienced by of mobile populations in higher education. When they leave the nation of citizenship, temporarily mobile populations such as students, executives and administrators, and faculty do not enjoy full security and human rights. Non-citizens typically enjoy less access to government services, they may be restricted as economic agents (for example in opening bank accounts, securing loans or purchasing property) and may have restricted opportunities for redress in relation to maltreatment and injury. Cross-border students typically enter the lower sub-strata of the workforce; many are paid less than citizens and they are more likely to be subject to discriminatory or exploitative work practices, especially in cases where the country of education stipulates limits on working hours in the conditions attached to student visas, and those limits are exceeded. Questions of the economic and social security of cross-border populations in higher education extend also to such areas as social welfare, health care, housing rights, legal rights and freedom from abuse and discrimination (Deumert et al. 2005). This lacuna in human rights invokes problems of national and international law, policy and governance that have immediate practical importance for many people but are inherently difficult to address because they push beyond nation-state frameworks. Precisely because such issues of cross-border security are generated in cross-border movement, single national governments do not ‘own’ those issues and not under the normal domestic political pressures to address them. Ultimately this kind of question would be most effectively addressed by a multilateral commitment to a common higher education space, as a global public good and a means to enhance a range of other goods, private and public; subject to negotiations that respect the sovereign rights of all parties. In addition to national governments and international agencies, such a global higher education public space could be designed so as to incorporate civil agents, autonomous HEIs, disciplinary communities, professions, and market actors involved in cross-border relations.

Conclusion: ‘Capacity ranges the waters’

Although position helps to shape dispositions, the latter, in so far as they are the product of independent conditions, have an existence and efficacy of their own and can help shape positions... however great the effect of position – and we have seen many examples of it – it never operates mechanically, and the relationship between positions and *position-takings* is mediated by the dispositions of the agents’ (Bourdieu 1993, pp. 61-62).

Universities throughout the world are positioned by Anglo-American hegemony, but no hegemony is ever absolute and on the periphery there is scope for proactive strategy, if the

will is there. Globalization and global flows are not fixed in nature. Davies and Nyland remark in *Globalization in the Asian Region* (2004, p. 9) that there is more than one possible globalization. Globalization is variously understood as the roll-out of worldwide markets; networking 'from below' by environmental, consumer rights and human rights activists; and the exchange of knowledge and cultural artefacts within a common space (Torres and Rhoads 2006). Hitherto Anglo-American economic and cultural contents have tended to dominate in many sectors, including higher education. But the Internet, air travel and research are not confined to English-speaking nations. Nor is it inevitable that global public goods in higher education will remain Anglo-American dominated. There are potentials for a more plural environment and for European, Spanish-speaking, Chinese, Islamic and other globalizations. To a limited extent these other globalizations already exist, for example the worldwide network of Islamic financial institutions and the impact of the Arabic TV network Al-Jazeera.

In the film industry there are already signs of pluralization that 'nobody could have foreseen a few decades ago'. India's Bollywood, which produces over 800 films in 25 different Indian languages each year from many regional centres, compared to the 200 films produced each year in the USA. There is the animation industry in Japan; films in China; and television production in Mexico, Venezuela and Brazil. In dollar terms the American film industry is much more profitable given its \$6.4 billion in international sales, compared to foreign earnings of \$100 million in Bollywood (Drache & Froese 2005, pp. 7-8 & 24). But the export of Bollywood films to the large Indian diasporic communities is expanding rapidly, and selected Bollywood and 'cross-over' products have broken into mainstream global markets.

The most immediate prospect for global pluralization in higher education lies not in the EU, which is making steady progress towards greater cooperation but is a long way short of an integrated meta-regional system, but China. Emerging economies outside the OECD now produce half of the world's output. China, with 1.3 billion people, doubled real per capita income the last decade, and according to some projections will overtake US PPP GDP by 2025. China is a long way short of American levels of networking¹³ and far behind the USA in higher education and research. But it is beginning to bridge the gap. Higher education in China is undergoing a major state-driven development in both quantity and quality terms, in extraordinarily rapid time, while engaging with curiosity and vigour with systems and HEIs throughout the world. This has incalculable long term consequences for world-wide provision, for the map of research activity and the flows of knowledge, the pattern of alliances and networks, and the cross-border flows of students and academic faculty. Between 1990-1991 and 2002-2003 the gross enrolment ratio rose from 3 to 13 per cent (World Bank 2006). From 1998 and 2004, a period of only six years, the total number of undergraduate admissions in China multiplied by *four times*, and in 2004 total enrolments in higher education reached 20 million, rendering Chinese higher education the largest system in the world.¹⁴ China is committed to lifting the quality and global competitiveness of its leading research universities and a large-scale program of state investment in universities is underway, led by the special programs of state assistance under the 211 Project involving the leading 100 universities and the 985 Project which supports 38 universities. Both programs provide block funding on the basis mainly of universities' strategic plans. China now accounts for half the R&D expenditure of the non-OECD nations (Vincent-Lancrin 2006, p. 16) and was the seventh largest producer of scientific papers in the world in 2001, compared to its fourteenth position in 1988 (NSB 2006). The number of doctoral degrees awarded by universities in China rose from 19 in 1983 to 18,625 in 2003. A doctoral admission of 54,000 was planned for 2005, signalling the prospect of further rapid growth in PhD graduates. This will lessen China's intrinsic

dependence on American PhD training abroad – though without necessarily reducing doctoral mobility per se – while reinforcing China’s own role as a global centre of research activity: graduate students are first authors of about half of all journal articles published (Liu 2006, pp. 2-6).

India now has 1.2 billion people and its economy is also growing rapidly. Between 1990-1991 and 2002-2003 the gross enrolment ratio rose from 6 to 11 per cent (World Bank 2006). The emergence of two more national systems on the scale of the American higher education system and the European higher education space has profound implications for the worldwide higher education landscape. It becomes possible to envisage a more multilateral global higher education space, with a more plural set of powerful nodes, in which capacity in research and education ‘range’ all of the world’s waters’ rather than being increasingly concentrated in the North Atlantic. Whether these giant national systems sustain their own distinctive models, or follow Anglo-American templates, remains to be seen. India is likely to use English as its research and teaching language because English is already almost as widespread as Hindi/Urdu throughout the nation, as well as having an obvious global facility. This might draw Indian higher education closer to the Anglo-American zone, while also encouraging greater cultural diversity within that zone. This is unlikely to happen in China. Given the economic weight and like future research weight of China, and the resilience of its traditions combined with China’s new-found engagement, Putonghua has good prospects of becoming a global language. There are prospects of a greater global role also for Spanish, given the demographic and cultural weight of Latin America, and the growing importance of Spanish as a second language within the United States itself; and perhaps also for Arabic.

Nevertheless, a bi-polar or four-polar world is not one in which diversity, freedom and the self-determination of nations and cultures big and small will necessarily flourish. Nor does the existence of competing claims for hegemony mean that the Anglo-American global project has collapsed; and still less does it imply the eclipse of hegemony as such. For the foreseeable future, in many parts of the world, national systems, non hegemonic models and individual universities face a fierce battle if they want to sustain what are now considered ‘non-mainstream’ forms of higher education. No doubt, too, US and UK institutions will struggle in their turn to sustain their hegemony. There will be more tools for normalising and representing global higher education in their favour, akin to the *Times Higher* global university rankings.

In their efforts to maintain an independent identity and strategic global trajectory, most public research universities operating outside the hegemony will depend on the provision of favourable conditions by their nation-state. National government support, in a manner that is respectful of university self-determination, will be particularly important in sustaining those models of university that are premised on the reproduction of national democracy, for example the UNAM and UBA model. At the same time it will also be important for public universities in the periphery to intervene effectively on the global scale, making their model visible and cooperating across the world. If they remain locked into the national system in a defensive posture, alternate models are unlikely to survive.

References

- Academe* (2006) Annual report on the economic status of the profession, 2003-2004. Accessed on 10 February 2006 at <http://www.aaup.org/surveys/04z/alltabs.pdf>.
- Altbach, P. (2005) Academic challenges: the American professoriate in comparative perspective, A. Welch (ed.) *The Professoriate: Portrait of a profession.*, Springer, Dordrecht, pp. 147-165.
- Altbach, P., (2002) Centers and peripheries in the academic profession: The special challenges of developing countries, in P. Altbach (ed.) *The Decline of the Guru: The academic profession in developing and middle-income countries*. Boston College, Chestnut Hill, pp. 1-22.
- Altbach, P., (2006) The dilemmas of ranking, *International Higher Education*, 42.
- Appadurai, A. (1996) *Modernity at Large: cultural dimensions of globalization*, University of Minnesota Press, Minneapolis.
- Berning, E. (2004) Petrified structures and still little autonomy and flexibility: Country report Germany, in J. Enders and E. de Weert (eds.) (2004) *The International Attractiveness of the Academic Workplace in Europe*. Herausgeber und Bestelladresse, Frankfurt, pp. 160-182.
- Bloom, D. (2005) Raising the pressure: globalization and the need for higher education reform, in G. Jones, P. McCarney and M. Skolnik (eds.) *Creating Knowledge: Strengthening Nations: The changing role of higher education*. University of Toronto Press, Toronto, pp. 21-41.
- Bourdieu, P. (1993) *The Field of Cultural Production*. Edited by Richard Johnson. Columbia University Press, New York
- Bourdieu, P. (1996) *The State Nobility*, translated by Lauretta C. Clough, Polity Press, Cambridge
- Brooks, R. (2005) Measuring university quality, *The Review of Higher Education*, 29 (1), pp. 1-21.
- Castells, M. (2000) *The Rise of the Network Society*, 2nd Edition, Volume I of *The Information Age: Economy, Society and Culture*, Oxford, Blackwell.
- Castells, M. (2000) *The Rise of the Network Society*, 2nd Edition, Volume I of *The Information Age: Economy, Society and Culture*. Blackwell, Oxford.
- Castells, M. (2001) *The Internet Galaxy: reflections on the Internet, business and society*, Oxford University Press, Oxford.
- Castells, M. (2001) *The Internet Galaxy: Reflections on the Internet, business and society*. Oxford University Press, Oxford.
- Crystal, D. (2003) *English as a Global Language*, 2nd Edition. Cambridge University Press, Cambridge.
- Davies, G. and Nyland, C. (2004) Views of globalization, empire and Asia: an introduction, in G. Davies and C. Nyland (eds.) *Globalization in the Asian Region*, Edward Elgar, Cheltenham, pp. 1-16.
- Deumert, A., Marginson, S., Nyland, C., Ramia, G. and Sawir, E. (2005) Global migration and social protection: the social and economic security of foreign students in Australia, *Global Social Policy*, 5(3), pp. 329-352.
- Drache, D. and Froese, M. (2005). *Globalization and the Cultural Commons: Identity, citizenship and pluralism after Cancun*. Research paper. Department of Political Science, York University, Canada.
- Enders, J. and De Weert, E. (eds.) (2004) The international attractiveness of the academic workplace in Europe – synopsis report, in J. Enders and E. de Weert (eds.) (2004) *The International Attractiveness of the Academic Workplace in Europe*. Herausgeber und Bestelladresse, Frankfurt, pp. 11-31.

- Enders, J. and Teichler, U. (2005) Academics' view of teaching staff mobility: The ERASMUS experience revisited, in A. Welch (ed.) *The Professoriate: Portrait of a profession.*, Springer, Dordrecht, pp. 97-112.
- Frank, R. and Cook, P. (1995). *The winner-take-all society*. The Free Press, New York.
- Guarino, C., Ridgeway, G., Chun, M. and Buddin, R. (2005) Latent variable analysis: A new approach to university ranking, *Higher Education in Europe*, 30 (2), pp. 147-165.
- Guellec, D. and Cervantes, M. (2002) International mobility of highly skilled workers: From statistical analysis to policy formulation, in OECD, *International Mobility of the Highly Skilled*. OECD, Paris, pp. 71-98.
- Harvey, D. (1990) *The condition of postmodernity : an enquiry into the origins of cultural change*. Blackwell, Oxford.
- Held, D. & McGrew, A. (2000) *The Global Transformations Reader: an introduction to the globalization debate*, Cambridge, Polity Press.
- Held, D. and McGrew, A. (2000). *The Global Transformations reader*. Stanford University Press, Stanford.
- Held, D. McGrew, A. Goldblatt, D. & Perraton, J. (1999). *Global Transformations: Politics, economics and culture*. Stanford University Press, Stanford.
- Held, D. McGrew, A. Goldblatt, D. and & Perraton, J. (1999), *Global Transformations: politics, economics and culture* Stanford, Stanford University Press.
- Institute for International Education, IIE (2006). Data on US international education. Accessed 1 February 2006 at <http://www.iie.org/>
- Institute for Scientific Information, Thomson-ISI (2006) Data on highly cited researchers, ISIHighlyCited.com. Accessed 10 April 2006 at: <http://isihighlycited.com/>
- Johnson, R. (1993) Introduction to Pierre Bourdieu, *The Field of Cultural Production*, pp. 1-25
- Kaul, I., Grunberg, I. & Stern, M. (eds.) (1999) *Global Public Goods: International Cooperation in the 21st century*. Oxford University Press, New York.
- Kelo, M., Teichler, U. and Wachter (eds.) (2006) *Eurodata: Student mobility in European higher education*. Lemmens Verlags- & Mediengesellschaft, Bonn.
- Lee, M. (2002a) The academic profession in Malaysia and Singapore: Between bureaucratic and corporate cultures, in P. Altbach (ed.) *The Decline of the Guru: The academic profession in developing and middle-income countries*. Boston College, Chestnut Hill, pp. 141-172.
- Lee, S. H. (2002b) The changing academic workplace in Korea, in P. Altbach (ed.) *The Decline of the Guru: The academic profession in developing and middle-income countries*. Boston College, Chestnut Hill, pp. 173-206.
- Linguasphere Observatory (2006) *Linguasphere Table of the World's Major Spoken Languages 1999-2000*. Accessed on 2 April 2006 at <http://www.linguasphere.org/language.html>
- Liu, N. (2006) *The differentiation and classification of Chinese universities and the building of world-class universities in China*. Presentation at the seminar at Leiden University, 16 February, 2006.
http://www.leidenslatest.leidenuniv.nl/content_docs/presentation_prof._liu.ppt#364,4,Dream of Chinese for WCU
- Marginson, S. (2004) Don't leave me hanging on the Anglophone: The potential for online distance education in the Asia-Pacific region, *Higher Education Quarterly*, 58 (2/3), pp. 74-113.
- Marginson, S. (2006) The public/private division in higher education: a global revision, *Higher Education*, 52, pp. 1-39
- Marginson, S. and Rhoades, G. (2002) Beyond national states, markets, and systems of higher education: A glonacal agency heuristic. *Higher Education*, 43, pp. 281-309.
- Marginson, S. and Sawir, E. (2005) Interrogating global flows in higher education. *Globalization, Societies and Education*, 3(3), pp. 281-310.

- Marquis, C. (2002) Universities and professors in Argentina: Changes and challenges, in P. Altbach (ed.) *The Decline of the Guru: The academic profession in developing and middle-income countries*. Boston College, Chestnut Hill, pp. 53-76.
- Marx, K. (1970) *Grundrisse*, translated by M. Nicolaus. Penguin, Harmondsworth.
- McLuhan, M. (1964) *Understanding Media*. Abacus, London.
- Musselin, C. (2004) Towards a European academic labour market? Some lessons drawn from empirical studies on academic mobility, *Higher Education*, 48, pp. 55-78.
- Musselin, C. (2005) European academic labour markets in transition, *Higher Education*, 49, pp. 135-154.
- Naidoo, R. (2004) Fields and institutional strategy: Bourdieu on the relationship between higher education, inequality and society, *British Journal of Sociology of Education*, 25 (4), pp. 446-472.
- National Science Board, NSB (2006) *Science and Engineering Indicators 2004*. Accessed on 9 April 2006 at: <http://www.nsf.gov/statistics/seind04/>
- Neave, G.y (2002) Editorial: Academic freedom in an age of globalization, *Higher Education Policy*, 15, pp. 331-335.
- Observatory on Borderless Higher Education, OBHE (2005). *Mapping Borderless Higher Education: Policy, markets and competition*. OBHE
- Organization for Economic Cooperation and Development, OECD (2004b). *Quality and Recognition in Higher Education: The cross-border challenge*. OECD, Paris.
- Organization for Economic Cooperation and Development, OECD (2005a). *Education at a Glance*. OECD, Paris.
- Organization for Economic Cooperation and Development, OECD (2005b). *E-learning in Tertiary Education: Where do we stand?* OECD, Paris.
- Ortmann, A. (2002) Capital romance: why Wall Street fell in love with higher education. The For-Profit Higher Education Research Project at the Curry School of Education, University of Virginia. Accessed on 11 April 2006 at: <http://curry.edschool.virginia.edu/forprofit/workingpapers.htm>
- Postiglione, G. (2005) China's global bridging: The transformation of university mobility between Hong Kong and the United States, *Journal of Studies in International Education*, 9 (1), pp. 5-25.
- Samuelson, P. (1954) The pure theory of public expenditure, *Review of Economics and Statistics*, 36 (4), pp. 387-389.
- Shanghai Jiao Tong University Institute of Higher Education, SJTUIHE (2005). *Academic ranking of world universities*. Accessed 1 February 2006 at <http://ed.sjtu.edu.cn/ranking.htm>
- Stiglitz, J. (1999). Knowledge as a global public good, in I. Kaul, I. Grunberg & M. Stern (eds.), *Global Public Goods: International cooperation in the 21st century*. Oxford University Press, New York, pp. 308-325.
- Teichler, U. (2004) The changing debate on internationalization of higher education, *Higher Education*, 48, pp. 5-26.
- The Economist* (2005). The brains business. 8 September.
- The Times Higher* (2006) World University Rankings, *The Times Higher Education Supplement*, Originally published on 28 October 2005. Accessed on 10 April 2006 at: www.thes.co.uk
- Torres, C. and Rhoads, R. (2006) Introduction: globalization and higher education in the Americas, in C. Torres and R. Rhoads (eds.) *The University, State and Market: The political economy of globalization in the Americas*. Stanford University Press, Stanford.
- Tremblay, K. (2005) Academic mobility and immigration, *Journal of Studies in International Education*, 9 (3), pp. 196-228.
- Valimaa, J. (2004) Nationalisation, localization and globalization in Finnish higher education, *Higher Education*, 48, pp. 27-54.

- Valimaa, J. (2005) Globalization in the concept of Nordic Higher Education, in Akira Arimoto, Futao Huang, and Keiko Yokoyama (eds.) *Globalization and Higher Education*, International Publications Series 9, Research Institute for Higher Education, Hiroshima University. Accessed 10 February 2006 at http://en.rihe.hiroshima-u.ac.jp/pl_default_2.php?bid=63653
- Vincent-Lancrin, S. (2006) *What is changing in academic research? Trends and futures scenarios*. Draft paper. OECD-CERI, Paris.
- World Bank (2006) *World Bank Data and Statistics*, Accessed 2 April 2006. <http://www.worldbank.org/data>
- WTO/GATS (2005) World Trade Organization website on negotiations on the General Agreement on Trade in Services (GATS) in relation to educational services. Accessed 11 September 2005. http://www.wto.org/english/tratop_e/serv_e/education_e/education_e.htm

Notes

¹ Technically, the value of a network increases as the square of the number of nodes in the network (Castells 2000, p. 71).

² To Appadurai's scapes they add military/law/governance, and the environment. They miss Appadurai's suggestive notion of 'ideoscapes', though this is partly addressed under cultural globalization.

³ See below for discussion of hegemony

⁴ These data are subject to caveats, however. In the majority of OECD nations, the 'foreign student' numbers include not just cross-border students, but resident non-citizens.

⁵ However more than one quarter of Germany's 'foreign students' are residents, mostly the children of migrant workers not granted citizenship (OECD, 2005, p. 254).

⁶ Between 1985 and 1996 the number of foreign students primarily supported as research assistants rose from 2000 to 7600 (Guellec & Cervantes 2002, p. 89).

⁷ France is an exception. In the 1990s the proportion of doctoral graduates who were foreign declined from one third to one fifth, while the recruitment of foreigners to permanent university posts declined. On the other hand there was an increase in the proportion of the staff of the research institutes that was foreign (Musselin 2004b, p. 156).

⁸ The USA is also formative of the academic profession in other nations in another way. The 1992 Carnegie survey of the academic profession in fourteen nations identified the US as the main exporter of academic labour, supplying three of the nations surveyed – Hong Kong, Korea and Israel - with more than 18 per cent of their staff. The next largest exporter, the UK, is much less important. France and Germany also play a small role as exporters of academic labour (Welch 2005, pp. 78-79). Most nations are net importers.

⁹ Note that these are not Purchasing Power Parity (PPP) comparisons. Accounting for differences in the cost of living in the respective nations narrows the cross-border differentials

¹⁰ In Korea and Taiwan the gap with American salaries has narrowed somewhat. In Korea in 2000 the average annual salary for a full professor in a public university was USD \$39,037; in a private university \$42,628 (Lee 2002b, p. 182). After PPP conversion Korea is on par with OECD Europe.

¹¹ 'The perspective of obtaining a tenured position early, may be decisive for a young foreign academic to apply in a foreign country' (Musselin 2004a, p. 58). Here both American and German tenure tracks are prolonged, especially the latter. France and Australia offer shorter routes to permanency.

¹² Goods are non-rivalrous when they can be consumed by any number of people without being depleted, for example knowledge of a mathematical theorem. Goods are non-excludable when the benefits cannot be confined to individual buyers, for example law and order, or social tolerance. Goods with neither quality are classified as private goods.

¹³ In 2003 the rate of Internet use in China was 63 per 1000 people which is average for 'lower middle income' as classified by the World Bank (2006). The same year China had 8.6 million broadband subscribers (Drache & Foese 2005, p. 16).

¹⁴ A further 8 per cent increase was planned for 2005 (Liu 2006, p. 1).