Governing Knowledge Globally: policy internationalism, global science and the open society

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Introduction

In this presentation I would like to explore the increased global governance of knowledge systems, including of universities, and the various issues and dilemmas that these processes engender. For example, we appear to be witnessing a global convergence in governmental policy prescriptions for state-university relationships and on the most appropriate organizational forms for advanced tertiary institutions. But why is this? And how, in an age of policy internationalism, is national and institutional divergence exhibited?

In the specific instance of scientific knowledge and its governance, does national divergence provide a clue in the potential for countries to produce high-level research? For example, as if often claimed, is there a close connection between the governance of 'open societies' (i.e. liberal parliamentary or congressional democratic systems) and the governance of research? If we accept that science is a social institution, comprised of interacting communities and networks reproducing norms and standards, are particular types of social structure more facilitative of world-class science than others? Some (such as Merton, Polyani, Popper, Shils and, more recently, Altbach) argue that the production of high-quality science is largely dependent upon the wider socio-political environment, one that values high levels of individual freedom and institutional autonomy. If so, are there therefore inevitable social institutional constraints on emerging world-class research universities in countries, such as China, where political systems are not pluralistic and competitive? Could, for example, such constraints place a ceiling on the extent to which, say, Chinese universities rise up research-based global university rankings, such as the Shanghai tables?

A further set of governance questions are raised by the re-emergence of science as a global rather than as a predominantly national phenomenon. Does the recent technologically-facilitated expansion of a more informal, person-to-person, self-reproducing and self-governing system of global science, one based increasingly on openly-sourced and distributed knowledge, herald a more ‘public’ and accessible science, not least for those nations previously excluded? Or, rather, do obscure collegiate processes and the high levels of tacit knowledge found in scientific experimentation, continue to maintain strongly exclusionary tendencies?

Policy internationalism in contemporary globalization

Globalization is often viewed as 'flattening' national differences in institutions and policies (Friedman 2006). That is, increased global interconnectivity generates common problems for national governments, heightened opportunities for policy networking across countries, and a tendency for countries to adopt common policy solutions. Policy internationalism in higher education, for example, is found in enhanced efforts by decisionmakers to develop cross-national policies on structures and regulation (as with the Bologna Process in Europe). But it also found in the increased salience for national decisionmakers of global templates or blueprints, often promulgated by bodies such as the OECD and UNESCO. These latter models include the 'New Public Management' (NPM), ideas on the benefits of institutional diversity within higher education systems, and acceptance that universities are key economic actors in the knowledge economy. Even national R and D priorities exhibit a strong commonality. The recent OECD Thematic Review of Higher Education showed an almost universal prioratization on biotechnology and the life sciences, nanotechnology, ICT, and the environment, making the national development of centres of research excellence a very competitive exercise.

Nonetheless we still need to explain policy internationalism rather than attribute it as inevitably a consequence of globalization, which does not really get us very far. Indeed, policy internationalism could be regarded as much as one of the causes of globalization than as simply its descriptive consequence. Among the factors that conduce to policy internationalism and the diffusion of global models we can cite at least four.

1. *Economic competition*

This explanation for policy internationalism tends to be the prevailing orthodoxy in governmental and inter-governmental bodies. It suggests that the nation state's general reliance on successful forms of advanced capitalism in a highly competitive global economy, and the belief that universities are critical instruments for attaining economic prosperity, means that national governments are disposed to adopt the organizational and regulatory models of the world's leading economies and university systems, particularly those of the US. In the US is found a higher education system composed of quite highly differentiated, market-based and autonomous institutions with distinctive missions. These characteristics tend to be viewed by international organizations such as the EU and the OECD, and many national governmental decisionmakers, as likely to deliver the innovation, knowledge and skills necessary for highly competitive national economic performance. More so than, say, systems where undifferentiated institutions broadly offer similar missions and are subject to tight and quite detailed state supervision.

A difficulty with this economic competition explanation, however, is that universities have wider social functions than simply economic. Moreover, there are reasons other than economic competition for policymakers to emulate other jurisdictions. Particularly they may lack their own resources to design alternatives to prevailing world models, irrespective of whether the latter are appropriate for their own circumstances. Most countries are policy-takers rather than policymakers.

2. *Inter-governmental governance*

A second explanation for policy internationalism in higher education may be found in the growing authority and institutional influence of inter-governmental and similar cross-border forms of governance around the world. Good examples are the EU and bodies such as the OECD, the IMF and the WTO. In most inter-governmental and supranational bodies, members are required both to actively participate in rulemaking and then to implement the outcomes at the national level. This requires a willingness to accept institutionally-driven compromises on ‘best practice’ governing models.

National adaptation to inter-governmental outcomes is made easier by the tendency for transnational governmental bodies to operate at a high level of codified abstraction and principles, as is the case generally with the EU. This leaves many administrative regulatory powers (and room for variation and thus local adaptability) at national level. Even when international bodies lack the legal instruments of the EU or the WTO, for example, they usually issue soft or voluntary codes and recommendations rather than mandatory hard law, which again generate openings for more local interpretations but while retaining an overall broader commitment to inter-governmentalism.

3. *Transnational networks of professionals*

A third explanation for policy internationalism in higher education is to regard transnational networks of professionals as the key. Global governance generally is ‘quilted’ into sectors – there is no world government - and this reinforces the influence of professionals, experts and other insiders in networks of the knowledgeable, not least in international organizations such as the OECD. Such networks contain both state and non-state actors, with the ‘non-political’ prestige of scientific and expert knowledge conferring added potency to policy outcomes.

4. *World society models*

Finally, world society explanations for policy internationalism, associated with the work of Meyer (2006), Frank and Gabler (2006), Powell and DiMaggio

(1991), and others, turn away from economic explanations. Rather than emphasizing the imperatives of the globalizing knowledge economy as generating territorial convergence in the governance of university systems, they locate it as a result of worldwide social processes. These views rest on the argument that organizations are constructed by widescale, increasingly global, cultures and meanings and that these become enshrined in organizational models. Universities, for example, operate increasingly as 'corporate persons' or autonomous organizations. As such they have become subject to the worldwide growth of formal organizations and processes of rationalization more generally in recent decades, which is leading to the increasing standardization of formal organizing across all sectors. There is thus a converging similarity of organizational form and structure in the higher education 'field', reflecting the external influences of a range of processes: coercive, including regulatory; mimetic, copying others; and normative, including those values associated with the notion of modernization.

Undoubtedly, although countries differ considerably in their material conditions, modern policy imaginaries of the university exhibit considerable similarity, reflecting transnational accounts and ideas. Indeed, the widespread policy prescription for national institutional diversity in higher education which emanates from many governments, is itself a universalistic phenomenon. Moreover, these transnational ideas are not simply organizational. University curricula, for example, have become quite standardized across countries in terms of the subjects available for study and what is taught, reflecting notions of 'modernity', 'rationality' and the 'scientific' (and, of course, the historical significance of the British Commonwealth for university curricula). The rise and fall of university subjects around the world appears quite synchronized.

National variety

Consequently, it is quite rare in these days of policy internationalism within sectors to find outright rejection by national governments of global governance templates and agreements, even if some countries would prefer that they could reject them. Rather, in such circumstances overt or formal acceptance of worldwide 'best practices' is often accompanied by behavioural foot-shifting, or other forms of passive and unenthusiastic implementation. The objective is to avoid the full impact of globally-inspired reforms while seeking to avoid the international and other criticism that would follow outright non-adoption.

Strategies of 'mock compliance' and 'regulatory ritualism' are two examples of formal policy adherence being undermined by actual behaviour.

‘*Mock compliance’* is especially likely when the costs of global compliance by a country tend to fall disproportionately on influential domestic interests. These ensure that implementation is often inconsistent with the new standards. The result tends to be regulatory forbearance (‘turning a blind eye’), administrative failure as a result of a lack of governmental impetus and monitoring, and private compliance failure (simply behaving as before). (See Walter, 2008, on the East Asian 1997 financial crisis, and its aftermath, for a good case study of such processes).

Elements of ‘mock compliance’ – defined as when the outward appearance of compliance is combined with disguised behavioural divergence from newly-adopted standards – may be found in higher education, too. The European Bologna Process, for example, aims at converging national systems’ architectures by 2010, but quite significant harmonization on the surface masks continuing national differences and varied local interpretations (Witte 2006).

‘Regulatory ritualism’ (Braithwaite 2008) is another form of behavioural divergence from intended outcomes. However, it tends to develop over time rather than at inception (unlike mock compliance). In higher education systems it can be found in the strategizing by institutions and academics in the face of increased external accountability, such as associated with quality assurance. After a period, regulatory processes such as those based on audit, become a ‘ritual of comfort’ or an ‘institution of pacification’ rather than evidence of successful and effective compliance (Power 1997). There is an acceptance of institutionalized means for securing regulatory goals combined with losing focus on achieving the goals or outcomes themselves. Both processes of mock compliance and regulatory ritualism may help to mask persisting national variety in higher education systems that lies below formal policy internationalism on the surface.

Science and national variety

The case of science also illustrates a long tradition of national variety. This has been reflected in two phenomena: firstly, philosophically and sociologically, in notions of the 'open society' as providing the optimal social conditions for science; and secondly, national variety is exhibited in policy terms by the scientific nationalism of the advanced countries in recent years.

In considering the former first, the notion of the 'open society' as the basis for quality science emerged notably in the aftermath of the Second World War. Merton (1942) and Popper (1945), for example, starkly contrasted 'totalitarian' regimes (Nazi and Soviet especially and their suppression of 'non-Aryan' and 'non-socialist' science respectively) with the 'open' or democratic societies of parliamentary or congressional political systems.

Particularly, they argued for an affinity between the critical rationalism ('organized scepticism' and 'disinterestedness', according to Merton) that underpins well-conducted science and the processes of a properly functioning democracy. For Merton, the conditions of freedom, autonomy, and scientific self-regulation through normative socialization that were found in liberal democracies, was functional for producing high-quality science.

For Popper (1963), good science makes progress through conjecture and refutation – no amount of evidence can prove a theory is true but one decisive experiment can show that it is false. The ideal scientific community is, therefore, quite 'democratic'. It allows anyone to propose an idea for experimental or other testing, and allows the fullest freedom possible to criticise it in a productive way. As Alan Ryan (2004) has noted, 'liberal democracy is the politics of responsible, non-tribalist, non-superstitious humanity; and science is the epistemology of those same persons'.

In recent years the notion of 'totalitarianism' as antithetical to scientific innovation has taken an organizational turn. Schumpeter, for example, wrote of the dampening effect of large organization on creativity. Florida (2002), in similar vein, suggests that the rise of the 'creative class' in the US and other advanced societies in recent years, and particularly its higher echelons that include scientists and university professors, requires environments of openness, tolerance and diversity within which to flourish. 'Creative ecosystems', he notes, 'are habitats open to new people and ideas, where people network easily and offbeat ideas are not stifled…the development of such environments cannot be planned from above'. Moreover, he adds that 'individuality, self-expression and openness to difference are favoured over the homogeneity, conformity and ''fitting in'' that defined the organizational age'.

On the face of it, liberal democracy has seemed beneficial for at least some forms of science, such as the technology of high living standards, although, it could be argued, it pays disproportionate attention to the medical diseases of the rich. Moreover, the favourable environments of democracies for scientific progress may also have more to do with the fact that such societies are highly-resourced rather than that they are democratic. Nonetheless, there is little doubt that Soviet Communism and Nazi Germany offered a poor environment for intellectual creativity (such as theoretical innovation), although often such societies were technically quite proficient.

Yet politics is more about the interplay of values and how we live together, than finding out how the world works (the main preoccupation of science), a distinction unacknowledged by Popper. Moreover, there are also marked divergences between Popper's prescription for scientific inquiry and some well-known descriptions of how scientists actually behave in practice. Kuhn (1962), for example, claimed that, in everyday scientific practice, very little falsification is undertaken; radical hypotheses are often frowned upon; young scientists have to undergo an apprenticeship before being allowed to be inventive; and 'normal science' is mostly 'gap-filling'. Nowotny et al. (2001) have observed that science is not especially democratically-organized and scientific careers and rewards are often highly-gendered and unequal in distribution.

Recently, in echoes of Merton, Altbach and Balan (2007) in considering Asian universities, argue that high levels of academic and institutional freedom are necessary for research universities to develop successfully and for a globally-respected research culture to become established. Nonetheless, we should note that in countries where a strong state imprint persists and where academic freedom remains constrained (China, for example), world-class research universities are rapidly emerging as a consequence of high state funding and encouragement. In China, the influence of the Communist Party-led state remains strong, not least in appointments to senior administrative positions, while publications and research activities can be closely inspected by the state. We may need to wait to assess further whether these general official aspirations to develop 'world-class' research universities run up against a continuing governmental desire also to maintain strong interventionist modalities, especially in the leading universities, which allegedly harms research creativity and innovation.

Global science and scientific nationalism

With respect to national variety in science policies, we might note that the dominant paradigm for knowledge production and innovation in most of the advanced countries in the second half of the twentieth century has been what Wagner (2008) terms ‘scientific nationalism’. In scientific nationalism, science is conceived as national property, as an economically competitive resource, as predominantly ‘big science’ involving major projects requiring substantial infrastructure and resources, provided by governments or by private foundations such as Rockefeller. Governments view science through a national prism, underpinned by strong beliefs connecting scientific development to national wellbeing.

National rivalry (not least in the Cold War years, including the race to the Moon), and the control of scientific funds by national science ministries to promote national objectives (economic and military) have served to limit opportunities for global scientific collaboration. Nonetheless, Wagner (2008) provides evidence to support the view that the focus of science has moved from the national to the global level over the last two decades. In this view ‘self-organizing networks that span the globe are the most notable feature of science today’.

Undoubtedly transnational scientific collaboration has grown hugely in recent years, not because researchers are ordered by governments to form global alliances, but because that is what scientists want. In such ways, scientists around the world offer each other complementary perspectives, information and competencies, and help satisfy individual career aspirations for high reputation, status and funds.

The rapid development of high-speed communication technology is an important instrument in helping to make possible and satisfy these scientific propensities for globally-produced, networked, collaborative, frequently non-governmentally supported, and informally-generated scientific knowledge. National citizenship or allegiance plays a minor role while the principal forces at work in global science are scientific curiosity and ambition.

The recent movement from nationally-based scientific research to a more globally-based one is controlled effectively by researchers rather than by governments. Global science is ‘emergent’ in the sense that the direction of the network is formed by interacting and communicative researchers (unlike, say, physical or infrastructural networks). When inter-governmental agreement on science funding is secured, as in the case of the recently-formed European Research Council of the EU, the scientific community seems particularly able to exercise considerable control.

Of course, scientific nationalism has not disappeared – even now the connectivity between national sciences and government technology policies remains the most observable element of the system of global science. But ‘megascience’ or formal partnerships constructed by government officials in discussions with scientists to obtain particular objectives, which usually are expensive and require long-term and large-scale national and international funding, now represent only around 10-15 per cent of global scientific collaborations.

The great majority of global scientific collaborations are formed by ‘person-to-person’ projects at the base of the pyramid. These are bottom-up and organized collectively by individuals through established professional networks. The goal is to address a research question on the basis of complementary capabilities, shared curiosities, and ‘self-funding’ (i.e. taxpayer funds from national funding agencies, which tend to have little control over how these project-level funds are expended or who participates in the research).

The issue of whether there is a necessary affinity between high-quality science and liberal democracy consequently has taken a globalized turn. Fukuyama (2008), for example, argues that most research in basic science ‘can develop only in an atmosphere of free and open exchange’ and that this helps to explain the strong globalization of scientific collaboration in recent years. Global science ‘can be understood only as the by-product of a horizontal process of social collaboration in which merit and results trump any consideration of national origin or jurisdiction’, and whose outcomes are largely public rather than proprietary goods. Fukuyama insists that modern science is an emergent transnational social system and network that generates complexity in an unplanned and unpredictable way through the interactions of individual agents.

<u>Globally governing science</u>

Increasingly, much of global science appears as a self-governing and self-reproducing system based on a set of global networks rather than structured by nationally controlled institutions operating by hierarchical command and following the dictates of a central state agency. Unlike the 'international science' of scientific nationalism – where collaboration occurs essentially between nation states and is undertaken by researchers from these nations working together with the support and protection of governments – 'global science refers to activities by individuals solving common problems regardless of their geographical positions. Global science is growing not because nations are promoting it, but because it serves the needs of those working within the knowledge-creation system, which in turn is driven by the desire to do original and creative research' (Wagner 2008: 31-2).

As Merton some time ago recognized, peer recognition is a powerful incentive for scientists, with reputation counting for more than money, and autonomy regarded more highly than simple job security. Scientists also want to be praised for something new and original, and to do what interests them intellectually rather than that which may be more commercially advantageous. The information and technology revolution of recent years is not the primary cause for the emerging global science but acts as a facilitator for the materialization of long-held dispositions and practices within scientific communities.

Science networks thus reinforce the idea of global governance more generally as containing strong elements of private authority. That is, the patterns of coordination are not governmental, but neither are they random. They follow clearly recognizable patterns and rules, and are based on normative socialization. As a result, trust develops from quite long processes of scientific apprenticeship, qualification-building and inter-personal contacts that help to develop the tacit knowledge necessary to scientific understanding. In this sense, scientific knowledge is not so much an accessible public good available to anyone, as a ‘collegiate’ and insider-understood and protected one (Kealey 2009). It is generated within ‘invisible colleges’ of researchers (Wagner 2008). Public science is not really freely available to be copied at will.

Globally-networked science, despite being more publicly accessible, therefore is not necessarily a model for the ‘open society’, despite Fukuyama’s insistence. It operates by rules which, although not controlled by any organization or state agency, are not necessarily perceived by outsiders. As the expense of forming a transnational research network can be large, participation is not without costs. Participants must share valued information or provide another resource – funds or experience, for example – and as a network matures the cost to new members rises accordingly. Moreover, there is a distinct system of cumulative inequality at work. Those that have high reputation, extensive collaborators, many citations, and relatively easy access to research funds and to the most talented younger scientists, tend to attract even more.

Conclusion

Reflexive, decentred and responsive governance is likely to be best for global science, rather than politicians constraining it through direct command or tightly-drawn national borders. The objective for decisionmakers is to find ways of guiding networks, influencing and facilitating access to them, in ways that preserve their essential dynamics. And it is in this sense that notions of regulatory governance re-emerge as a key focus for both analysts and policymakers.

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