HIGHER EDUCATION AND THE QUESTION OF SCOTTISH INDEPENDENCE

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1. INTRODUCTION

Scotland's academic standing internationally is high. Crude though numerical rankings of universities and of academic activities can be, their very existence shapes perception, and so Scotland's position in them matters. In the most recent QS ranking, it has one university in the top 20, 3 in the top 100, and four in the top 200.[2] These four – the four ancient Scottish universities – have a reasonable claim to being amongst the founders of modern higher education globally, insofar as their model, exported across the Atlantic in the eighteenth century, provided the founding principles in the nineteenth century for the US system that, in the twentieth century, shaped higher education across the world.[3]

Scottish higher education policy is already in principle autonomous in most respects. The only aspects of it that are explicitly reserved to the UK Parliament are the work of the Research Councils and the ways in which the regulation of some professions impinges on the curriculum in relevant courses in universities. The universities, and the Scottish Government and its agencies, choose to continue to take part in many UK-wide structures, for example in connection with selecting students and with quality assurance for both teaching and research, but the choice to do so is not fettered by the country's current constitutional status.

This situation – of high standing, and of relatively strong policy autonomy – may of course be read both ways in the current constitutional debate. It may, most obviously, be taken to shown that the status quo works well, and that Scottish higher education does not need the country to be independent in order to flourish. The alternative interpretation of the current autonomy is that current achievements demonstrate what Scotland can do, acting for itself – how, when left to manage its own affairs, it can achieve distinction internationally. I am going to assume that neither side in this debate would want Scottish universities to be less successful than at present according to internationally visible criteria, or Scotland to be less attractive as a place to study for people from outside the country. I'm also going to concentrate here on this aspect

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[1] Notes for talk at meeting on 'Science and Higher Education', Aberdeen University, 17 October 2013 (in the series 'Enlightening the Constitutional Debate', sponsored by the Royal Society of Edinburgh and the British Academy). School of Social and Political Science, Edinburgh University; lindsay.paterson@ed.ac.uk.

[2] From the QS rankings: http://www.topuniversities.com/university-rankings/world-university-rankings/2013. Scotland has about one in six or one in seven of the UK representation according to each of these thresholds: the UK numbers are 6 in the top 20, 18 in the top 100, and 29 in the top 200. Scotland has about

[3] See, for example, Rothblatt, S. (2007), *Education's Abiding Moral Dilemma: Merit and Worth in the Cross-Atlantic Democracies, 1800-2006*, Oxford: Symposium; Seligman, A. B. (1992), *The Idea of Civil Society*, New York: The Free Press; Sloan, D. (1971), *The Scottish Enlightenment and the American College Ideal*, New York: Teachers College Press.

– on the international visibility – as the topic most relevant for attention when the country is on the verge of the decision that faces it. That is not to deny that there are many other aspects of higher education policy or science policy that matter, some perhaps more important in some sense than the international standing – policies relating to widening access, to academic standards, to the cultural, civic and economic effects of teaching and research. The reason I am not going to consider them in my opening comments is simply that the capacity to influence them is already in Scotland's hands, and if independence would change anything in that respect it would only be in the amount of resources available to pay for them, which is a matter of economic policy or of social policy, not of educational policy.

2. RESEARCH

2.1 Research income[4]

It is often pointed out that Scotland attracts a share of income dispensed by the UK Research Councils and by research charities that is higher than its share of the UK population. Thus its percentage of the expenditure of the Research Councils was 10.7% in 2012-13, and it has been around 11-12% since the late-1990s, whereas Scotland's share of the UK population is about 8.5%. But that claim of disproportionate success is potentially misleading about the quality of Scottish research, since Scotland has more academics than its population share would warrant: Scotland's share of UK academics, 10.4%, is almost exactly the same as its share of research grants.[5]

The same is true within broad academic fields, for those where there is a fairly close correspondence between field of academic employment and field of research council expenditure. For example, Scotland gets 10% of all MRC funding and has about 10% of academics working in the many fields relating to medicine. It has 8% of people working in the social sciences, and, since 1999, generally has received about 8-10% from the ESRC. Similar figures apply to the AHRC and the humanities. In environmental science, Scotland has 11% of academic staff and generally has had about 10-11% of funding from the NERC.

However, matters are even more complex than that, since the income obtained by Scottish researchers seem to have become increasingly through the route of open competition and less through the route of institutional grants.[6] For example, in 2009-10, Scotland received 10.2% of MRC competitively awarded grants and a similar 9.9% of institutional grants. The latter has steadily declined since then, to 4.5% in

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[4] Sources: Diamond, I. (2013), 'Options for Scotland's research funding', Figure 1, collating data from the annual reports of the Research Councils since 1998-99, and also RCUK data kindly supplied by Ian Diamond. Author's calculations from the Higher Education Information Database for Institutions (http://www.heidi.ac.uk). Academic fields were defined in terms of the data column 'Cost Centre (2004-05 onwards)' as applied to full-time-equivalent academic staff as: 'fields relating to medicine' are columns 1 to 8, 'social science' is columns 26-30, 34 and 38; 'humanities' is columns 31, 33, 35 and 37; and 'environmental science' is columns 14.

[5] Calculated from the Higher Education Information Database for Institutions (see previous note).

[6] RCUK data from Ian Diamond.

2012-13, while the former has increased to 15.3%. Thus, while the overall share of MRC grants remained more or less constants in that period (rising slightly from 9.9% to 10.4%), the balance has shifted in Scotland towards competitively awarded grants.

All of this suggests that the share of resources earned is driven not by Scottish or UK policy as such, but by the autonomous activities of Scottish academics working in the same way as academics elsewhere in the UK. It suggests also that, when Scottish academics have not succeeded in gaining large infrastructure grants, they have devoted their energies and expertise to raising money through competitively awarded grants. If Scotland receives more than its population share, that it thus only because it has more academics than its population share. And the reason for the relatively large number of academics in Scotland is historical. Scotland had an above-average provision of university education when the UK state took over its funding in 1919, and the position has simply drifted forward without any explicit decision by any policy maker to sustain it. It is certainly not something for which any recent policy decisions of either the UK or the Scottish governments can claim credit.

2.2 Research productivity

Thus more revealing of whether Scottish academics are achieving highly is to examine more detailed indicators of their performance, as the Chief Scientific Adviser to the Scottish Government did in 2009.[7] That report uses mainly OECD measures, but for information about publications and their citation it uses data provided by Thomson Reuters National Science Indicators. Scotland is compared to a group of countries consisting of the G7 and 18 countries with 'research bases of similar size', or 'with active and rapidly growing research bases with specific strengths'. These countries 'produce about five-sixths of the world's research publications … and a higher proportion of the most influential outputs.' [8]

On most measures, Scotland performs well relative to its numbers of researchers, or its GDP, though in common with other Western countries its share is declining as China and India become more involved in science. Some telling examples are as follows.

(1)[9] There is strong investment. Scotland has a relatively high share of researchers relative to population: it has 4.1 per thousand population, compared to the UK's 2.9. Finland leads at 7.4. Mostly the investment is in the public sector[10], and hence the writing of these researchers is generally in the public domain.

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[7] Office of Chief Scientific Adviser (2009), *International Comparative Performance of Scotland's Research Base*, Edinburgh: Scottish Government.

[8] p. 7 in Office of Chief Scientific Adviser (2009). The G7 are: UK, USA, Canada, France, Germany, Italy, and Japan. The 18 other countries are: Belgium, Denmark, Finland, Ireland, Netherlands, Spain, Sweden, Switzerland, Australia, Brazil, China, India, Iran, Israel, Singapore, South Africa, South Korea, and Taiwan.

[9] p. 68 in Office of Chief Scientific Adviser (2009).

[10] p. 24 in Office of Chief Scientific Adviser (2007), *Metrics for the Scottish Research Base*, Edinburgh: Scottish Government. Public sector expenditure on research and development is 0.95% of

(2)[11] But the importance of Scottish research is more than just about investment. Scottish researchers produce more publications than the average. Its share of papers relative to its share of researchers is 2.52; in other words, its researchers write two and half times as many papers as the average for the group of comparison countries.

(3)[12] Moreover, Scottish researchers write papers that people notice. Between 2003 and 2008, Scotland's share of citations grew more rapidly than the average for the comparison group, from 1.6% to 1.8%, though the main change in this period is the emergence of China. Scotland's *impact* increased, and it was second in the group: there were 1.72 citations per Scottish paper, compared to the UK average of 1.5, and generally since 1999 Scotland has been close to the top-ranking Denmark. In this measure, China is low. There is a Scottish advantage in citations per paper in all fields except economics and business.[13] Scotland also has a disproportionately large share of the world's 1% most cited papers: it has 1.88% of such papers, compared to 1.1% of all papers.[14]

(4)[15] Because of this productivity and impact, Scotland also has a high share of papers and of citations relative to GDP (share of papers to share of GDP is 3.48; the ratio is 2.77 for citations). And Scotland does well on citations relative to public expenditure on Research and Development (its share of citations relative to its share of such expenditure is 1.68), and relative to expenditure on higher education (1.29).

(5)[16] Scottish academics achieved this partly by working increasingly with people in countries outside the UK, and indeed the largest benefits in that respect seem to have come from collaboration with small countries such as Israel, Switzerland, Belgium, Denmark and Finland. Nearly half of Scottish publications by 2008 involved a co-author from outside the UK: 48% in 2008, up from 33% in 1999.

Another version of that point about links with academics working in other countries is the attracting of academics from elsewhere to work in Scottish universities. Scottish universities stopped being staffed predominantly by people educated in Scotland by the 1930s, and the market for good academics has, since then, become global.[17] Regularly published official figures tell us only the proportion who have non-UK nationality: in 2011-12, 13% of academic staff in Scotland were of non-EU

GDP in Scotland, but 0.7% in the comparison group (the same group as in the 2009 report above); private sector expenditure on research and development is 39% of gross expenditure on research and development in Scotland, but about two thirds in the comparison group.

[11] p. 31 in Office of Chief Scientific Adviser (2009).

[12] pp. 32 and 45 in Office of Chief Scientific Adviser (2009).

[13] p. 93 in Office of Chief Scientific Adviser (2009).

[14] p. 57 in Office of Chief Scientific Adviser (2009).

[15] pp. 73, 74, 77 and 78 in in Office of Chief Scientific Adviser (2009).

[16] pp. 58-59 in Office of Chief Scientific Adviser (2009).

[17] Anderson, R. D. (1987), 'Scottish university professors, 1800-1939: profile of an elite', *Scottish Economic and Social History*, 7, pp. 27-54.

nationality, and 15% were from an EU member state other than the UK. The share from outside the UK has risen in the past decade: in 2001-2, 9.8% were from outside the EU, and 7.2% were from another member state. [18] A survey of academic staff in Scotland and England carried out just over a decade ago found that, among the academic staff who were from the UK, around 38% had received their first degree outside Scotland.[19] In total, then, just over half of academic staff are from outside Scotland. However, in that survey there was no evidence that the amount of research done by incoming staff was, on average, any different from that done by staff who had been educated in Scotland: the mean percentage of time spent on research was 39% for people who had received their first degrees in Scotland, 37% for those who had received their first degree in the rest of the UK, and 39% among those who had received their first degree outside the UK.[20] The survey also found that the academic values of academic staff were similar regardless of where they had received their first degree. Indeed, where there was a difference between Scotland and England in the values held by academics, the people of English origin in Scotland were much closer to people of Scottish origin in Scotland than to academics currently working in England: for example, there was stronger agreement among people of both these origins in Scotland than among people working in England that universities ought to contribute to local economic development, and should prepare students to take on roles in the community, and that government ought to monitor the expenditure of universities closely.

This tends to suggest that what matters is not the origins of staff who are selected but the nature of the competition for recruitment: those staff who come from Scotland are thus selected by the same criteria as staff who come from elsewhere, and so Scottish universities are already in effect operating autonomously in a global labour market. Balancing this with national allegiance is not a peculiarly Scottish concern at all: Bauder has pointed out that mobility is intrinsic to an academic career, and is perfectly consistent with national allegiance.[21]

3. STUDENTS

If exposure to international networks is important for academics, there is also likely to be, analogously, an intellectual benefit of international flows of students. There is a financial benefit to higher education from such income, but that is contingent on relative fee levels, and is also likely to confer only transient advantages in an internationally competitive market where fee levels (and thus relative financial benefit) will change in response to the market's operation. The key question here for whether the current benefits could be sustained if Scotland were independent is

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[18] Author's calculations from both years from the Higher Education Information Database for Institutions (see above), as the nationality of full-time equivalent academic staff.

[19] Paterson, L. (2003), 'The survival of the democratic intellect: academic values in Scotland and England', *Higher Education Quarterly*, 57, 67-93.

[20] Sample sizes were respectively: 169, 32 and 47.

[21] Bauder, H. (2012), 'The international mobility of academics: a labour market perspective', *International Migration*, DOI: 10.1111/j.1468-2435.2012.00783.x.

whether the flows into Scottish higher education are unusually large by international standards.

In the past forty years, there has been growing movement of students internationally, mainly to developed countries from rapidly developing countries. In 2011, 4.3m students were enrolled in tertiary education outside their country of origin, double the number in 2000 (2.1m) and more than five times the level in 1975 (0.8m). The countries which take most students are Australia, Canada, France, Germany, the UK and the USA.[22] The countries from which most students come are China, India and Korea, making up 28% of all international students. Asia is the origin of 53% of all international students. Nevertheless, some developed countries also provide large numbers of international students: Europe makes up 23% (in contrast to North America, which supplies only 2.7%).[23]

Scotland has relatively high shares from international sources in its total student enrolment. If we confine attention to what the OECD calls Type A programmes (which, in UK terms, means essentially a first degree rather than an undergraduate diploma), Scotland has 14.6%[24] That is less than the OECD leader, Australia (which has 20.8%), and the UK as a whole (18.3%), but is twice the OECD average (6.9%), four times the proportion in the USA (3.3%), and higher also than countries with which Scotland is often compared (for example, Sweden (7.5%), Ireland (5.9%), and Norway (1.4%)).

One explanation of where people go is language of instruction[25], in which Scotland has the great advantage that English is becoming the dominant academic language globally. Another explanation is the reputation of programmes[26] – hence the importance of international rankings. Temporarily, the relative level of fees matters too, and may be a reason why the US share dropped when fees rose.[27]. It is also important that the visa restrictions on incoming students are not unnecessarily complex.

In all these respects, Scotland currently shares advantages with the rest of the UK, and so if Scotland were independent there would have to be continued attention to demonstrating that the reputation of programmes was as high as in the rest of the UK and that fees were competitive. Since, on visas, the UK has become more restrictive recently than other countries which receive large numbers of international students,

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[22] pp. 306-307 in OECD (2013), *Education at a Glance*, Paris: OECD.

[23] Table C4.3 in OECD (2013).

[24] Table 21 in Scottish Funding Council (2013), *Higher Education Students and Qualifiers at Scottish Institutions, 2011-12*, Edinburgh: Scottish Funding Council; Table C4.1 in OECD (2013).

[25] p. 307 in OECD (2013).

[26] p. 308 in OECD (2013).

[27] pp. 309-311 in OECD (2013).

there would be scope for Scotland to make entry to the country easier without jeopardising security.[28].

If Scotland were independent, the category of international student would also include those from the rest of the UK, and thus would rise from 14.6% of first-degree students to 27.6[29]. This would be high by international standards (well ahead of Australia's level of 20.8%), although what would not be unusual would be the proportion from a neighbouring country (47%). In 12 out of 34 OECD countries, the proportion of international students from neighbouring countries is at this level or higher – for example, Austria has 59%, Belgium 51%, the Czech Republic 67%, Estonia 74%, Netherlands 49%, Poland 53%, and the Slovak Republic 61%.[30]

The question might then arise politically as to whether this level of incoming students was too high. The debate about the proportion of English students at Scottish universities has not been as strong in recent years as it was in the 1980s, but it could return. Indeed, there are precedents in the European Union of controversy arising when particular faculties have attracted very high proportions of students from outside a country's borders. For example, this happened in the French-speaking part of Belgium in the middle part of the past decade, when entry to medical studies from France rose to around 80%.[31] Similar pressures were experienced in Austrian medical courses from German students. The Belgian and Austrian governments sought to impose quotas in medical courses for students from their countries, of 75% (Austria) and 70% (Belgium). This was challenged in the European Court of Justice on the grounds that it restricted the free flow of students, but these two governments argued that the quotas were in the interests of the future staffing of medical services in their countries. The legal issues remain unresolved, but for most university courses the defence of quotas on the basis of the specific staffing requirements of particular sectors of the economy would not be available, and so it seems unlikely that an independent Scottish government could do anything to alter the balance of Scottish and non-Scottish students. Thus it seems likely that universities in an independent Scotland would have, by international standards, high proportions from outside the country, although, within that group, most of the external students would be from the very familiar origins of the rest of the UK.

4. CONCLUSIONS: THE IMPORTANCE OF ACADEMY AUTONOMY

It might be suggested that the over-riding consideration from whatever state structures Scotland will have is that Scottish universities ought to have the academic autonomy which enables them to select the best staff and the best students, with no regard to

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[28] Annex A in Universities Scotland (2012), *Universities in a Dynamic Constitutional Environment*, Edinburgh: Universities Scotland,

[29] Table 21 in Scottish Funding Council (2013).

[30] Table C4.5 in OECD (2013).

[31] van der Mei, A. P. (2011), 'Free movement of students and the protection of national educational interests: reflection on *Bressol and Chaverot*', *European Journal of Migration and Law*, 13, pp. 123-134; Käsper, K. and Kerikmäe, T. (2012), 'Access to higher education in the EU', *European Journal of Law Reform*, 14, pp. 399-413.

anything other than appropriate criteria of academic quality and potential. By European standards, UK universities have high levels of autonomy, as measured by such indicators as the capacity to make their own appointments, to set salaries, to promote staff, to select students, to design curricula, and to decide on how quality is to be measured.[32] Although that autonomy has been eroded in the past four decades, it remains high by international criteria. If – as has been suggested here – the best way to encourage good research is to enable academics to compete for funding in open competition operating according to objective and visible criteria, then the most important prior requirement is that universities be free to employ good staff and that they have access to such competitions. If the flows of students should be determined predominantly by academic quality, then university control of admissions, and their adherence to objective measures of assessment, are crucial.

The various ways in which, as has been illustrated here, universities in Scotland are already engaged in global networks of discussion and employment are reminiscent of a point made by Cairns Craig about the sense of cultural independence that emerged among Scottish writers in the 1980s:

> What happened in the aftermath of 1979 was that … perceived weaknesses of the Scottish tradition, as viewed through the lens of the more 'standard' development of the English novel, were adapted and exploited by Scottish novelists in what, retrospectively, appears as a deliberate act of artistic devolution – if not, indeed, as a declaration of cultural independence.[33]

Perhaps, in fact, intellectual autonomy owes little, either way, to whether a country is politically independent. The main policy points here for universities and for research would then relate to recruiting the best staff, providing them with reasonable environments (though, in the high ratio of outputs to investment, we see that investment is not necessarily the most important point), giving them access to the best work internationally, and giving them fair access to competitions for research funding. In order to maintain the international quality of Scottish research, the criteria by which research proposals are assessed for funding have to be at the level represented by international standards, which requires that the grant-awarding bodies are part of international networks. That is true of the UK Research Councils, of the large UK research charities, and of the new European Research Council, which, unlike previous European schemes of awarding research funding, is based on principles of expert judgement by academic peers applied to research ideas mainly generated by academics themselves.[34] A Scottish Research Council could, in principle, operate in similar ways, although there is no precedent for any kind of Scottish government agency being as firmly embedded in international networks as

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[32] Estermann, T., Nokkala, T. and Steinel, M. (2011), *University Autonomy in Europe II*, Brussels: European University Association. Though the UK data in this report relate to England, there are no important differences from the rest of the UK in the measures that are used.

[33] p. 128 in Craig, R. C. (2006), 'Devolving the Scottish Novel', in J. E. English (ed.), *A Concise Companion to Contemporary British Fiction*, Oxford: Blackwell, pp. 121-140.

[34] Luukkonen, T. (2013), 'The European Research Council and the European research funding landscape', *Science and Public Policy*, pp. 1-15.

would be required. Moreover, if a Scottish Research Council were to take over all the funding provided by UK public sources, it would have to find resources that were a greater proportion of GDP than the UK Research Councils provide: the deficit in funding that would have to be made up from Scottish resources would be 0.25% of Scottish GDP, or about £300m annually.[35] These details, though important, could no doubt be solved, with political will. The precise mechanisms and constitutional structures matter less than the principles of competition and properly academic scrutiny.

So whether the position of the universities is at all relevant to the constitutional debate depends on whether constitutional structures have any relevance to the maintenance of the fundamental conditions of academic freedom to select, teach, carry out research, and publish, and to exercise independent critical judgement according to universal criteria. I see no indication from either side in the current debate that these principles are seriously under threat, and certainly no evidence that an independent Scottish government would want to interfere in academic autonomy in any serious way. The problems are, rather, to ensure that academics in an independent Scotland – operating with due academic autonomy – would not be excluded from taking part in competitions for research funding, and to ensure that Scottish universities would continue to attract good students from outside the country's borders. Ensuring these things if Scotland became independent would require political goodwill, as much from politicians in the rest of the UK as from those who would be governing Scotland.

[35] See footnote 10: public expenditure on research in Scotland is about 0.95% of GDP, whereas the average in the comparison developed countries noted in that footnote is 0.7%. The difference, 0.25%, is £325 in a GDP of £130bn (Scottish Government (2013), *Quarterly National Accounts Scotland*, Edinburgh: Scottish Government). If we take the deficit compared to UK public expenditure on research (a deficit of 0.33% instead of 0.25% - same source as in footnote 10), the cost annually would be about £400.