

Forty years on: long-term change in the first destinations of graduates

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This article is about changes in the employment of graduates over the four decades since data on their first destinations was first published in the early 1960s. It aims to identify the main changes and their implications. The data used are drawn from questionnaire surveys with very high response rates (over 80 per cent). The main finding is that most new graduates found employment within the education system in the early 1960s, whereas 40 years later only a minority do so. This has implications for how well higher education prepares students for their next steps after graduation, the distinction between subject-centred and student-centred higher education and the espoused goals of universities.

Keywords: graduate destinations, graduate employment, student-centred education, subject-centred education, tripartite mission

Information on the first destinations of university graduates has been published since the early 1960s, starting with the graduates of 1961-62. This article compares the first destinations of recent graduates with those 1960s graduates. The aim of the article is to identify the main changes and explore implications. For the most part, the article is concerned with consequences rather than causes.

The University Grants Committee (UGC) was responsible for publishing the details of the first destinations of the 1961-62 graduates and, in so doing, stressed the importance of this information:

‘It is clearly of importance to know what careers are followed by men and women when they graduate from the universities; it is important to the nation, to industry and the professions, to the universities, and to parents, schools and school pupils’ (UGC, 1963: iii).

That importance was elaborated in the UGC publication on the destinations of the 1963 graduates:

‘The country needs to know what becomes of the young people on whose higher education in the universities a great deal of public money is spent. The professions, industry and commerce also need to know what proportions of those who graduate ... they are respectively attracting. Much of the usefulness of a series of published statistical analysis lies in the changes it reveals over a number of years’ (UGC, 1965: iii).

These words emphasise the value of monitoring the changes over a number of years. This article does this over the years 1962-2002, a period of major change in the British economy and unprecedented change in British universities.

The article looks at change in the employment and unemployment of graduates and the relative employment experience of male and female graduates. In so doing it identifies a variable that appears to play an important role in linking the development of universities to their commitment to different university missions. That variable is the proportion of graduates who are employed outside the education system itself.

Background

Data on the first destinations of graduates were first published in mid-1963 by the UGC, the body then responsible for allocating public funds to different universities. That data pertained to students who qualified for a first degree from a British university during the period October 1961 to September 1962.

For the previous five years the UGC had collected data on first destinations to help make decisions on the resourcing of universities. A ‘Universities Appointments Officers Statistics Committee’ provided advice to UGC on interpreting the statistics. In 1963, Keith Murray, Chair of UGC, wrote:

‘The University Grants Committee have, with the assistance of the Universities, collected information for a number of years on the various kinds of employment (including further education or training) entered into by university graduates, but they have hesitated to publish the results until they were certain that the returns were sufficiently comprehensive and had achieved sufficient validity to warrant publication. The data have been collected for five years in the form they are now published and the Committee consider that they now give a fair representation of the careers followed by university students on completing their first degree course’ (UGC, 1963: iii).

Why were the data published at this particular time? First, there was a significant rise in public spending on university education in the 1950s, which implied greater accountability. Second, government was concerned

about shortages in 'skilled manpower' (sic). And third, there were calls for expansion of the universities (or at least higher education) to catch up with the rising participation rates of Britain's economic competitors. Each of these factors argued for greater awareness of the contribution of graduates of British universities.

The UGC was cautious about the figures; the five years from the first collection of such data to the first year of publication allowed the UGC to reassure itself that the data would reveal no nasty surprises or unforeseen interpretations that could disadvantage the universities and provided plenty of time to make sure the data was presented in an acceptable form.

During the 1960s and 1970s the three groups who expressed most interest in the first destinations of graduates were the government, university career appointment services, and the UGC itself. Government saw a link between graduate skills and economic competitiveness and its interest was reflected in a series of articles in the *Employment Gazette* in the 1970s. The data helped university appointments officers to offer careers advice to university students of different subjects. And the UGC used the data in its decisions on university funding, which partially depended on graduate employability as measured by the first destinations statistics.

It was not until the 1980s, however, that graduate destinations became a burning issue. In the 1980s, unemployment rose sharply in the UK, and particularly amongst those leaving institutions of education, including higher education. The unemployment of new graduates rose almost 10-fold between the early 1960s and the early 1980s (Bee and Dolton, 1990). Since that time, the data on graduate employment have continued to play a key role in discussions on a range of issues of importance to universities and higher education. There is not space here to review the ensuing debates around the first destinations, so they are recorded in terms of five key issues in each of the subsequent decades.

1980s

Rise in graduate unemployment (eg Roizen and Jepson, 1985)

Concern about graduates filtering down the graduate labour market from so-called 'graduate jobs' to 'non-graduate jobs' (eg Tarsh, 1985)

Transferable skills for graduate employment (eg Barnett, 1994)

Expansion of the range of subjects available for study in universities (the development of new subjects of study in HE was often presented as a response to employment opportunities and employer demand for graduates)

Increased emphasis on university performance indicators, with graduate employment/unemployment as a key indicator (eg Taylor, 1986)

1990s

Increased emphasis on universities as an engine of economic competitiveness and growth (eg DES, 2003)

Doubling of the HE participation rate from about 16 per cent to over 30 per cent, ie from 1.2 million to about 2.1 million (eg Scott, 2005), and its impact on graduate employment (Mason, 1996)

Concern over the meaning of 'graduateness' (eg HEQC, 1996) and rise of research into 'what graduate employers' want (eg Hawkins and Winter, 1995)

Student loans, together with the related issues of student debt and repayment after graduation (eg Winn and Stevenson, 1997)

Growing public awareness of university league tables in which graduate employment (and unemployment) was a key ingredient (eg Bowden, 2000; Tight, 2000)

2000s

Introduction of the 2-year Foundation Degree in 2000 (Yorke, 2005)

Government's explicit aspiration to increase HE participation rate to 50 per cent and the increased supply of graduates that would involve (eg DES, 2003)

Introduction of student fees and their impact on student debt and repayment after graduation (eg Ramsden and Brown, 2007)

Evidence of a fall in the private rate of return on graduate employment (eg Elias and Purcell, 2004)

Renewed interest in the role of the university in a wider society (eg Watson, 2007)

A measure of the continuing concern about graduate destinations is that in 2004 the National Institute of Economic and Social Research (NIESR) devoted a whole issue of its journal, *National Institute Economic Review*, to 'The UK Graduate Labour Market'.

Despite the relevance of graduate employment to all these issues, there has been no attempt to take a long-term view of changes over the four decades for which the data have been available. This article seeks to make a contribution to filling that gap.

Method and data

The method was simply to compare the first destinations of students who graduated in 1962 with those who graduated in 2002. The first destinations data are based on postal questionnaires and follow-up telephone calls. They are collected by the careers advisory service of each university following agreed common procedures and standards.

As with any data collected from questionnaire surveys there is the problem of non-respondents. The response rates for the first destinations survey is about 83 per cent; slightly more (about 84 per cent) for females and slightly less (about 82 per cent) for males. The main reason for such high response rates appears to be the tenacity of the careers advisory

services with their follow-up phone calls. Small-scale follow-up studies of the non-respondents indicated that ‘they are broadly representative’ (Tarsh, 1982: 208).

Over the 40 years covered by this article there have been changes in the coverage, categories and definitions used in the collection of the data. There have been a number of changes in coverage, especially in the early years. Until 1965-66, graduates of former colleges of advanced technology, and graduates in education, were excluded. And until 1971-72, graduates of medicine, dentistry and veterinary science were excluded.

The data collected for the 1961-62 graduates pertained to the universities of Great Britain only. That continued until 1971-72 when the coverage was extended to universities across the whole of the UK. After the Higher Education Statistics Agency (HESA) took over the collation of data from the Universities Statistical Record (USR), the coverage was extended to all publicly funded higher education institutions (HEIs) in the UK.

There have been substantial revisions to the categories used in collecting and presenting the data. For example, the data for the 1962 graduates included a category ‘overseas students returning to their own country’; this category was excluded from the later data which are now limited to UK graduates only.

As another example, the data on 1962 graduates included ‘Training for ordination’ as a category for the male graduates only and ‘Secretarial training’ as a category for female graduates only. In this article, these categories have been added into the category ‘Other training’ to make the data for the 1962 graduates comparable with the data for the 2002 graduates.

In order to take account of the changes in the categories and definitions across the 40 years of data collection, the broad strategy was one of aggregation. The principle adopted was to undertake the minimum aggregation necessary to achieve comparability between the data for the 1962 graduates and the data for the 2002 graduates. This worked in most cases (at a cost of losing some detail) but there remained a few ‘hard’ cases.

A particularly difficult case was the change from the 1961-62 category ‘Undertaking Further Education or Training – teacher training’ to the 2001-02 category ‘Undertaking Study or Training – Dip/Cert/PGCE/prof. training course’. The latter was distinguished in the 2001-02 data from another category, ‘Undertaking Study or Training – private study/other study/training’. This meant that by 2002 it was no longer possible to identify the percentage of graduates going directly on to teacher training, but it was possible to identify the upper limit. The significance of this is apparent in the ‘findings’ section of this article.

The other main problematic case was the 2002 category ‘Employed – UK paid part-time employment’. The problem was that the 1962 data did not recognise part-time employment as a category of graduate employment.

A graduate with only part-time employment in 1962 would therefore have been placed in the category 'Seeking employment'. For this reason the 2002 category 'Employed – UK paid part-time employment' has been added to the category 'Seeking Employment or Training' in this paper. Happily, however, the percentage of graduates in the part-time employment category is so small that, although this decision was difficult, it was not significant in terms of the findings of this paper. Its real importance is that it foreshadowed what would emerge as a major problem: leakage between the first destination categories whereby students could be represented in more than one category. The expansion of part-time higher education (particularly at PhD and Masters levels) meant students could be assigned to more than one category.

By the start of the twenty-first century this problem had become severe as the 'portfolio first destination' had arrived: a student could be unemployed, registered for a part-time masters degree and doing a little part-time work on an intermittent basis. The growing significance of this situation was acknowledged by the first destinations statistics on the 2003 graduates when there could be more than one destination recorded for each graduate; this means that the totals across the first destination categories could exceed 100 per cent of the number of graduates. In effect, there was a shift in the approach from recording each graduate's 'main destination' to ticking 'all that apply'. This is not a problem for those using the current data, who presumably understand the basis on which the data is collected. But it is a problem in comparing data on the first destinations of 2003 graduates (and subsequently) with data on the first destinations of graduates up to that year. For this reason, the data used in this article end with the first destinations of the 2002 graduates.

Findings

The findings are presented in the form of tables designed to facilitate comparisons. A given difference in percentages is of greater significance if the numbers of students are large than if the numbers of students are small. As an aid to taking this into account when inspecting the figures, corresponding percentages were tested for statistical significance. A simple binomial test was used to assess the statistical significance of the difference between corresponding percentages. Differences in the percentages in the tables that are statistically significant are noted if the difference is significant at the 10 per cent level and the 1 per cent level.

Table 1 groups the first destinations in three broad categories: gained employment, further academic study or training, and seeking employment or training.

Between 1962 and 2002 the proportion of new graduates still seeking employment or training at the end of their graduating year rose five-fold (from 3.3 to 16.4 per cent). Clearly the graduates of the twenty-first century

encountered more difficulty finding acceptable employment than did those of the early 1960s.

Somewhat paradoxically, a significantly higher percentage of the twenty-first century graduates found early employment than their 1960s counterparts: 63.5 per cent compared to 50.2 per cent. This ‘paradox’ is resolved by observing the reduction in the proportion progressing to further academic study or training. In 1962 this destination accounted for almost half (over 46 per cent) of new graduates. Four decades later it accounted for only one in five graduates.

Table 2 allows us to explore further this decline in the percentage of new graduates going on to further academic study or training. It disaggregates this category into three components: research and further academic study, teacher training, and other training.

TABLE 1
*First destinations of first degree graduates in 1961-62 and 2001-02:
 major categories*

	Gained employment ¹	Further academic study or training ²	Seeking employment or training ³	Total graduates of known destination ⁴
	%	%	%	Number
1962 graduates	50.2	46.5	3.3	19,465
2002 graduates	63.5	20.1	16.4	163,935
	p < .001	p < .001	p < .001	

Sources: UGC (1963), Higher Education Statistics Agency (2003)

Notes

- 1 Includes employment overseas, any students returning to previous employer and temporary or short-term employment as well as permanent employment
- 2 Includes research or academic study overseas
- 3 Includes those in part-time employment as well as those seeking employment or training
- 4 Excludes those not available for employment

Table 2 shows that the percentage of new graduates progressing to research or further academic study fell by almost half (from 19.1 to 11 per cent). And the percentage of new graduates going on to teacher training fell by at least half. The change in data classification makes it impossible to say exactly how many new graduates went into teacher training in 2002, but the nature of the reclassification does allow us to say that between 1962 and 2002 the percentage of new graduates going on to teacher training fell from 19.6 per cent to a *maximum* of 9.2 per cent. Insofar as some graduates went into other forms of training (and in 1962 it was 7.8 per cent), then this 9.2 per cent figure is an overestimate, and possibly quite a large overestimate. The figure

TABLE 2
*First destinations of first degree graduates in 1961-62 and 2001-02:
 sub-categories*

	Gained employment		Research or further academic study ²	Teacher training	Other trainings ³	Seeking employment or training ⁴	Total grads of known destination
	Home ¹ %	Overseas %					
1961-62	47.8	2.5	19.1	19.6	7.8	3.3	19,465
2001-02	61.1	2.4	11.0	9.2		16.4	163,935
	p<.001	ns	p<.001	*	*	p<.001	

Sources: As for Table 1

Notes:

- 1 Includes self-employment and unpaid employment as well as paid employment
 - 2 Includes research or academic study overseas
 - 3 Includes training for social work
 - 4 Includes those in part-time employment as well as those seeking employment or training
 - 5 Excludes those not available for employment
- * Significance tests inapplicable

that shows the greatest stability across the four decades in Table 2 is in the category 'Gained employment overseas', which remained at the relatively low figure of about 2.5 percentage points.

What happened to the graduates who found employment in the UK? This question is addressed in Table 3, which looks at graduate destinations across the broad sectors of the economy. Possibly the main change in the structure of employment in the UK over the last four decades has been 'de-industrialisation'. The manufacturing sector, in particular, has contracted in terms of the proportion of GNP that it contributes. Table 3 shows that this was reflected in the percentage of graduates going into manufacturing industry, which fell by almost 30 percentage points (from 37 to 7.8 per cent). The distribution of graduates amongst the remaining sectors was very uneven. There was a substantial increase in the percentage going into public services – up from 13.6 to 24.2 per cent – and there was a large increase going into the services industries. But the proportion of graduates entering commerce and financial services fell a small but significant amount from 9.7 to 7.3 per cent. This may seem surprising as this sector has prospered and grown in recent decades. And the percentage of new graduates going into education fell by almost half (from 20.5 to 11 per cent). It is easy to find a reason for this: graduates in the twenty-first century, unlike graduates of the 1960s, required an education qualification to become a teacher. While this explains the reduced proportion of graduates finding employment in education, it makes the reduction in the percentage of graduates going on to teacher training (shown in Table 2) all the more remarkable.

One factor not apparent in the above tables is the change in gender balance that occurred across the four decades of this study. How has this affected the pattern of first destinations of graduates over that time? Table 4 starts the process of disaggregation by gender.

The first thing to notice in this table is the extent of the change in gender balance. The number of male graduates increased five-fold over the period, whereas the number of female graduates rose about 20-fold. In the early 1960s female graduates made up only about a quarter of all graduates. By the twenty-first century, female graduates were in the majority; they outnumbered male graduates by about 20 per cent.

What effect did this huge increase in the relative supply of female graduates have on the broad pattern of first destinations? Table 4 shows that in 1962 female graduates were less likely than male graduates to be employed at the end of their graduating year (40.3 per cent compared with 53.5 per cent). Forty years on, this employment disadvantage had been reversed. By 2002 they were significantly (at the 1 per cent level) *more* likely to find employment than their male counterparts.

In the early 1960s, proportionally more women than men progressed to further academic study or training. In fact, the large majority (56.9 per cent) of women went on to further academic study or training. By the twenty-first

TABLE 3
*Employment categories of first degree graduates in 1961-62 and 2001-02
 who gained UK home employment*

home	Education ¹	Other public services ²	Manufacturing Industry	Commerce and financial services ³	All other industry and other services ⁴	Total in employment ⁵
	%	%	%	%	%	Number
1961-62	20.5	13.6	37.0	9.7	19.2	9,297
2001-02	11.0	24.2	7.8	7.3	49.6	114,855
	p < .001	p < .001	p < .001	p < .001	p < .001	

Sources: As for Table 1

Notes:

- 1 Numbers in this column are low because most students who enter education employment undertake further academic study or teacher training and are thereby excluded from this table
- 2 Includes public administration for central government and local government, defence, and hospital services but excludes education
- 3 Includes accounting, banking and insurance
- 4 Includes all sectors of employment other than public service (and other education), manufacturing industry, commerce and financial services
- 5 Excludes graduates who obtained employment overseas

TABLE 4
*First destinations of first degree graduates in 1961-62 and 2001-02:
 major categories by sex*

	Gained employment¹ %	Further academic study or training² %	Seeking employment or training³ %	Total graduates of known destination⁴ Number
1961-62				
Female	40.3	56.9	2.8	4,842
Male	53.5	43.0	3.5	14,623
	p<.001	p<.001	p<.01	
2001-02				
Female	64.5	20.5	15.0	93,250
Male	62.2	19.7	18.2	70,685
	p<.001	p<.001	p<.001	

Sources: As for Table 1

Notes: As for Table 1

century, women were still more likely to go on to further academic study or training than men, but for both groups the percentage was less than half of what it had been four decades earlier.

In 1962 the unemployment rate for new women graduates (2.8 per cent) was little different from that for males (3.5 per cent) and the difference was not significant at the 1 per cent level. By 2002 the difference was over 3 percentage points (15 per cent against 18.2 per cent) which was very significant (with a z-score of 17.3).

In summary, it seems reasonable to conclude that there has been an unambiguous improvement in the situation for new women graduates over the 40 years compared to their male counterparts: they were significantly more likely to be employed than new male graduates (reversing their erstwhile position), they were still significantly more likely to progress to further academic study or training, and they were significantly less likely to be unemployed at the end of the year in which they graduated.

Table 5 shows that between 1962 and 2002 the percentage of males going on to research or further academic study almost halved (from 22.2 to 12.9 per cent). A natural explanation for this is that the five-fold increase in the number of male graduates simply outpaced the growth in the number of openings for research and further academic study. This explanation, however, is undermined by the observation that the 20-fold increase in the number of female graduates led to no reduction in the percentage of female graduates going on to research or further academic study.

The percentage of male graduates going on to teacher training fell from 1962 to 2002 by at least half (from 14.5 to 6.8 per cent or less). We can be sure that the percentage going on to teacher training had fallen to less than 6.8 per cent but we cannot say how much less because of the change in the basis of the 2002 data category definitions.

Over one third of the female graduates in 1962 went straight into teacher training. In 2002 it was less than a third of that percentage: 11 per cent of female graduates progressed to teacher training and other training combined. (Unfortunately, the data for 2002 do not allow us to disaggregate the 11 per cent into its 'teacher training' and 'other training' component parts.) This fall in the propensity of female university graduates to go on to teacher training is all the more remarkable in view of the fact that teacher training had become a requirement for employment in most areas of teaching.

Table 6 looks at the sectors of the economy that employed those graduates who did find employment in the year in which they graduated. The data from which Table 6 was compiled refer only to those who gained home employment in the UK but, as we have seen, the percentage who found employment outside the UK did not change much (at between 2 to 3 per cent) across the 40-year period.

TABLE 5
*First destinations of first degree graduates in 1968I-62 and 2001-02:
 sub-categories by sex*

	Gained employment		Research or further academic study ²		Teacher training		Other training ³		Seeking employment or training ⁴		Total grads of known destinations ⁵	
	Home ¹ %	Overseas %	%	%	%	%	%	%	%	%	Number	
Females												
1961-62	38.3	2.0	9.5	35.0*	12.5*	2.7	4,842					
2001-02	62.2	2.3	9.5	11.0*	15.0	93,250						
	p<.001					p<.001						
Males												
1961-62	50.9	2.6	22.2	14.5*	6.3*	3.5	14,623					
2001-02	59.7	2.4	12.9	6.8*	18.2	70,685						
	p<.001		p<.001			p<.001						

Sources: As for Table 1

Notes: As for Table 2

* Significance tests inapplicable

TABLE 6
*Employment categories of first degree graduates by sex in 1961-62 and 2001-02
 who gained UK home employment*

	Education ¹	Other public services ²	Manufacturing industry	Commerce and financial services ³	All other industry and other services ⁴	Total in home employments ⁵
	%	%	%	%	%	Number
Females						
1961-62	46.6	22.3	13.1	7.0	11.2	1,853
2001-02	14.4	29.2	6.3	6.4	43.6	67,040
	p<.001	p<.001	p<.001		p<.001	
Males						
1961-62	14.1	11.5	43.3	10.4	21.1	7,444
2001-02	6.2	17.2	9.9	8.7	58.0	47,815
	p<.001	p<.001	p<.001	p<.001	p<.001	

Sources: As for Table 1

Notes: As for Table 3

Of those female graduates in 1962 who found home employment, almost half (46.6 per cent) were employed in education. By 2001-02 this figure had dropped to only 14.4 per cent. The reason is obvious: by 2002 new teachers needed to have a teaching qualification. This explanation solves one problem but exacerbates another: in Table 5 it should have reduced the percentage going into home employment and increased the percentage going into teacher training. Yet we found precisely the reverse: a large fall in the percentage going into teacher training for a teaching qualification and a large rise in the percentage finding home employment. For males the story is the same in principle but it is muted by the fact that fewer males went into education (or teacher training) in the first place.

Outside education we find the expected fall in employment in manufacturing for both females and males. It was much greater for males, of course, because the percentage of males going into manufacturing was much higher in the first place (43.3 per cent for males against only 13.1 per cent for females).

Not surprisingly, perhaps, the percentage of both females and males going into the public services (excluding education) rose significantly (by about 7 percentage points and 6 percentage points respectively). More surprising, perhaps, is that there was no rise in the percentage of either female or male graduates going into the thriving sector of commerce and financial services. In fact, for males there has actually been a significant fall (at the 1 per cent level).

That leaves the sector 'all other industry and services'. This is a ragbag collection of economic activity for which equivalent categories could not be found in the data of 1962 and 2002. In 1962 this 'miscellaneous' sector accounted for about 1 in 10 employed female graduates and about 1 in 5 of the male graduates. By 2002, graduate employment in this sector was still disproportionately made up of male graduates, for whom it now accounted for almost 60 per cent of all male graduate employment. In interpreting these figures it is well to keep in mind that the size of this sector is partly the result of real factors such as the de-industrialisation of the economy but it is also partly the result of changes in the definitions of economic sectors between 1962 and 2002.

Discussion

The findings in this article reveal a number of issues that are sufficiently significant and/or interesting to warrant further discussion or trigger further questions. For example, to what extent did the changed pattern of employment of new graduates reflect changes in the overall occupational structure of the economy? Why did the expanding commerce and financial services sector not absorb a larger share of the graduates displaced by the decline in manufacturing industry? And what accounts for the apparent improvement in the pattern of first destinations of female graduates relative

to men, despite the huge rise in the supply of female graduates?

Each of these issues could be the subject of further enquiry. In fact, the first issue has been addressed with respect to changes in the first destinations of graduates over the first 25 years (1962-87) and reported in *Studies in Higher Education* (Bee and Dolton, 1990). The conclusion was that, at least for that period, changes in the economy and the overall occupational structure in society could, at best, explain only part of the changes in the pattern of graduate destinations.

In this article we focus the discussion on a different issue implied by the findings: the proportion of new graduates whose first destination is within the education system itself. We have seen that the percentage of university graduates going on to further academic study or training fell sharply, as did the percentage of new graduates finding employment in the education sector. Together, these two findings imply a significant reduction in the percentage of new graduates with first destinations within the education system. Table 7 shows the extent of the fall.

TABLE 7
Graduates who were employed outside the educational system in 1961-62 and 2001-02

	Remained within the education system¹	Gained employment outside the education sector	Seeking employment or training	Total graduates of known destination
	%	%	%	Number
1962 graduates	56.8	39.9	3.3	19,465
2002 graduates	27.1	56.5	16.4	163,935

Sources: UGC (1963), Higher Education Statistics Agency (2003)

Notes

¹ Employment in the education sector, research, further full-time academic study or training

Table 7 shows that in the early 1960s most (56.8 per cent) graduates remained in the education system in one way or other after graduation: they were employed in education, training to be teachers, undertaking research or further academic study or additional training. By 2002 the position had turned around; within six months of graduating most (56.5 per cent) of the students were in employment in a non-education sector of the economy.

In fact, the table understates the extent of the turnaround. The unemployment rate for new graduates had risen from 3.3 per cent to 16.4 per cent and almost all these unemployed graduates too would eventually

find employment in either the education sector or outside it. For example, there will have been some graduates who were unemployed at the end of their year of graduation and who eventually decided to become teachers (Berry, 1973). Since we don't know what proportion of the unemployed graduates this comprised, it is prudent to revise the table to remove those graduates still seeking employment or training.

TABLE 8

Graduates who left entered the non-education sectors or employment in 1961-62 and 2001-02 excluding those still seeking employment or training

	Remained within the education system¹	Gained employment outside the education sector	Graduates of known destination²
	%	%	Number
1962 graduates	58.7	41.3	18,823
2002 graduates	32.5	67.5	137,214

Sources: UGC (1963), Higher Education Statistics Agency (2003)

Notes:

- 1 Employment in the education sector, research, further full-time academic study or training
- 2 Excluding graduates still seeking employment or education/training

Table 8 shows that in 1962 about six out of 10 graduates remained in the education system for at least the first steps of their graduate careers. By 2002 the ratio was down to about three out of 10. In other words, in the early 1960s most graduates remained in the education system and by the twenty-first century most did not.

What brought about this shift? The last four decades of the twentieth century saw a massive reduction in the manufacturing sector and a considerable expansion of the education sector. Had other things remained equal, we might reasonably have expected the percentage of graduates finding employment in the education system to rise. But other things did not remain equal – and that which remained least equal of all was the whole supply side of the graduate labour market. Between the early 1960s and the early years of the twenty-first century, the UK higher education system shifted from being an elite system to become a system of mass higher education (Trow, 2005; Scott, 2005). The whole education system expanded, but not as fast as the expansion in the number of university graduates. The additional numbers of university graduates (an eight-fold rise) were more than even an expanding education system could absorb. As

the UK moved from elite to mass higher education, there was necessarily a rise in the percentage of graduates finding employment outside the education system.

It is reasonable to believe that, as a general rule, a rise in HE participation rate will be associated with a rise in the percentage of graduates who find employment outside the education system. I conjecture that this applies to higher education systems across all countries. Although this conjecture is based on reasoning from the limited capacity of employment opportunities in the education system, it is, of course, empirically testable. Such a 'law' would have significant implications. First, as HE participation increases, there is a change in the balance of the elements that comprise the social role of higher education (as a smaller proportion of each year's new graduates is devoted to simply regenerating the education sector). Second, a rise in the percentage of graduates employed in industry and commerce is likely to affect the nature of employment within those sectors (some 'non-graduate' jobs will become 'graduate' by virtue of the capabilities that graduates bring to them). Third, as higher education expands, and more graduates are employed outside the education system, there are implications for the nature of the education that universities provide. It is this last implication that I now explore.

It is reasonable to describe a university education in the early 1960s as 'Humboldtian', because it was a higher education that served the advancement of knowledge. *How* did it serve the advancement of knowledge? First, it prioritised the advancement of knowledge. Second, it classified graduates according to their potential to contribute to the advancement of knowledge. And third, it prepared students for a role in contributing to the advancement of knowledge.

How can we measure the 'height' of higher education? In the Humboldtian university, it is measured by its closeness to the edge of the advancement of knowledge. It could also be measured by the *quality* of the ideas conveyed or by the *difficulty* of the ideas or in many other ways. For those outside the Humboldtian fold, 'latest knowledge' and 'quality of knowledge' are not necessarily correlated at all. Newman, for example, in his influential 'idea of a university' favoured student exposure to the finest writings of antiquity as the embodiment of the highest education (Newman, 1852).

The elevation of the 'advancement of knowledge' in Humboldtian universities was supported by the development of the Doctor of Philosophy degree as an education for future researchers. The PhD was developed by those German universities in the nineteenth century who had taken on board the new Humboldtian ideal. In those universities, it was natural to view an education for future researchers as the highest form of higher education, as future researchers would play the leading role in the advancement of knowledge. For those outside the Humboldtian camp, there was little reason

to view the education of future researchers as the highest form of higher education. For Newman again, the highest form of higher education would presumably have been that education which most developed the powers of the students' minds to appreciate the highest virtues.

In addition to student learning, higher education involves the assessment of students according to their levels of achievement of the required learning outcomes. In the Humboldtian university, this meant assessing students in terms of their potential contribution to the advancement of knowledge. The advancement of knowledge in the Humboldtian university is commonly referred to in terms of the creation, dissemination and application of knowledge. Students who were most successful in a first degree were placed in the highest category; they were certified as most suitable to become creators of new knowledge. Students who fell short of the highest performance were placed in the second category; they were seen as less suitable to become creators of new knowledge. The remainder were seen as the least suitable to become creators of new knowledge. The Humboldtian ideal supported the widespread adoption of the 'classified degree', which ranked classes of students by their potential to contribute to the advancement of new knowledge.

A higher education designed to prepare students to contribute to the advancement of knowledge needs to show the students the latest additions to knowledge and gaps that remain to be filled. As the stock of knowledge expands, the only way to reach the leading edge is by increasing specialisation. This therefore is a feature of a Humboldtian higher education. So too is the development of the ability to test claims to the advancement of knowledge. For many academics steeped in the Humboldtian tradition, this was the acid test. In the words of Sir Douglas Hague, chair of the Economic and Social Research Council for much of the 1980s:

'Academics must believe that acquiring the ability to test ideas and evidence is the primary benefit of a university education' (Hague, 1991: 64).

This was what was meant by the development of critical faculties in the Humboldtian university: the ability to assess the truth and expose those who would mislead through error or deceit. It contrasted with the pre-Humboldtian university which aspired to the development of critical faculties based on refinement of sensibilities that would enable the student to distinguish good from bad, aesthetically and morally as well as intellectually. What this boils down to for the graduate of a Humboldtian university is a higher education that emphasises the acquisition of the latest knowledge in a specialised academic subject and the ability to critically assess the veracity of ideas, assertions and evidence in that subject.

This sort of subject-centred higher education may have served the advancement of knowledge but did it prepare students for their next steps after graduation? We would argue that for the majority of students the answer to the question is yes. The reasons are:

In the 1960s, most graduates' 'next steps' were within the educational system where they would be involved in advancing knowledge by either creating new knowledge (notably research) or disseminating it (notably teaching) or training to do so.

The percentage of graduates who were unemployed at the end of their graduating year was low (at only 3.3 per cent).

In the elite system of HE that pertained in the early 1960s, a subject-centred higher education was compatible with a student-centred higher education for the *majority* of university students. At that time, the sort of higher education that prepared students to play a part in the advancement of knowledge also met the needs of the majority of students by preparing them for their next steps in their careers, which was within the education system.

Over the next 40 years the percentage of new graduates remaining within the education system fell steadily, with a corresponding rise in the percentage employed outside of education. The result was that a Humboldtian higher education left an increasing proportion of students relatively ill-prepared for their next steps. By 2002, the percentage of new graduates finding employment outside higher education was almost 70 per cent, and the percentage still unemployed at the end of their graduating year had increased at least five-fold. As this happened, there were calls to widen the HE curriculum. In the 1980s, many universities took seriously the calls for higher education to develop skills that were transferable to students' work after graduation. In the 1990s, many universities took seriously calls to develop their students as independent learners – having the capacity to plan and manage their own learning. And since 2000, many universities have been taking seriously calls for higher education to develop the capacity for reflective learning.

Humboldt said that the goal of the university is not to serve the needs of students but to advance knowledge. It was easier to concur with that assertion when advancing knowledge coincided with serving the needs of the majority of the students. This was the case in the 1960s when most students remained within the education system and the minority that left found graduate employment with relative ease. It was not the case in the early twenty-first century when most students left the education system on graduation. This weakened the attraction of the Humboldtian vision of the university.

In the early 1960s universities did not need mission statements. There was a consensus within universities that the university mission was the

pursuit of academic excellence (that is, excellence in the advancement of knowledge). Those who wanted institutions of higher education to serve some other purpose(s) had better find another name for them. And they did – they called them polytechnics. They were created to put greater priority on meeting the educational needs of students who would follow a range of professional employments and on serving local and regional communities. By the beginning of the twenty-first century the large majority of university graduates were finding employment outside the education system, the polytechnics had been re-badged as universities, universities had been asked to produce mission statements to clarify their goals, and the term ‘tripartite mission’ had entered the discourse about the goal(s) of UK universities.

How did the ‘tripartite mission’ differ from the mission of the Humboldtian university? According to the tripartite mission the university has three goals: meeting the higher education needs of students, the advancement of knowledge, and service to those outside the walls of the university. In fact, universities have pursued these three goals since their beginnings in the middle ages (see Bourner, 2008). What made the Humboldtian university different is that it was *dominated* by just one of the aims, the advancement of knowledge, such that the other two aims were required to serve that aim.

In a Humboldtian university the service to those outside the walls of the university and the higher education of students are valued *insofar* as they serve the advancement of knowledge. By contrast, a university committed to the tripartite mission values each of the goals *in its own right*. This is what underpins the differences between the university committed to the Humboldtian mission and the university committed to the tripartite mission. And it is also what underpins many of the differences between the majority of universities in the early 1960s and the majority of the universities in the twenty-first century.

It is easier to justify the Humboldtian vision of the university in an elite system of higher education because there is little conflict between a subject-centred and a student-centred higher education. As participation in higher education rises and the transition is made to a system of mass higher education, most students find employment outside the education system, and the higher education needs of students go beyond preparation for a role in the advancement of knowledge. This weakens the case for the Humboldtian university mission and correspondingly strengthens the case for its main rival, the tripartite mission.

In addition to advancing knowledge and providing a higher education for students, the tripartite mission involves service to those outside the walls of the university – ‘public service’. This is the ‘third leg’ that is especially favoured by government. In the account advanced above, public service has a ‘free rider’ status; it benefits incidentally and as a by-product of the rise in attractiveness of the tripartite mission relative to its Humboldtian rival.

However, insofar as the government provides support for universities that is related to the number of students, an increase in the HE participation rate increases the funding of universities and increased public funding strengthens the influence of the public service agenda within universities.

Is the experience of British universities over this period an example of a more general phenomenon? If so, what would a more general description of the phenomenon be like? As any system moves from 'elite' to 'mass' then the number of graduates who find employment outside of the higher education system shifts from a minority to a majority. And when most graduates are employed outside the education system, the needs of the majority of graduates are no longer met by a Humboldtian higher education – a subject-centred higher education intended to serve the advancement of knowledge.

Summary and conclusions

The findings in this article have raised a number of potentially significant issues including: the relationship between graduate recruitment and the changed structure of the economy; the apparent reluctance of the commercial/financial sector to absorb a larger share of the new graduates; the relative improvement of female graduate employment prospects compared to male graduates; and the reduced propensity of new graduates to find employment within the education system itself. All of these issues are worth exploring further but space constraints necessitated a choice between them and the article has focused on the last one.

The conclusion of the discussion of the findings is that it was the shift in the UK system from an elite to a mass system that produced the rise in the percentage of graduates finding employment outside the education system between 1962 and 2002. For the majority of students this opened up a gap between a subject-centred university education and a student-centred university education. And this, in turn, weakened the case for the Humboldtian university mission and strengthened the case for its principal alternative, the tripartite mission.

It is possible to cast this conclusion in even more general terms, along the following lines. As societies grow richer their higher education participation rates rise (as long as the demand for higher education remains income-elastic). As higher education participation rates rise, the percentage of graduates who find employment outside the education system rises. And as the percentage of graduates who find employment outside education rises, there is a corresponding fall in the percentage of students whose higher education needs are met by a Humboldtian higher education. And as the percentage of students whose higher education needs are met by a Humboldtian higher education falls, the attractiveness of the Humboldtian university mission falls with a corresponding rise in the attractiveness of its principal rival, the tripartite mission.

There are many good reasons to monitor the first destinations of graduates of UK universities, including their role in many of the leading issues in higher education practice and policy. This article has identified an additional one: changes in the first destinations of the graduates of UK universities can help us understand some of the changes in recent decades in the nature of the education offered by UK universities and change in the missions that UK universities espouse. In so doing, the article has distilled out a significant explanatory variable: the percentage of new graduates who find employment outside the education sector. This variable plays an important role in understanding the effect of rising participation rates on not only the nature of university education but also the goals of universities.

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