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education, research and employment (Paris,
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ARCHAEOLOGY AND THE GLOBAL ECONOMIC CRISIS

**MULTIPLE IMPACTS,
POSSIBLE SOLUTIONS**

Edited by Nathan Schlanger
and Kenneth Aitchison

5. The end of a golden age? The impending effects of the economic collapse on archaeology in higher education in the United Kingdom

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1 Introduction

Quite by chance, the most recent audits of the two archaeological sectors in the United Kingdom – the professional, commercial or developer-funded, and the academic – were conducted at the very moment when the economic crisis begun to surface (with the ‘collapse’ of the Northern Rock bank in the autumn of 2007). For the professional sector this survey was Institute for Archaeologists’ Archaeology Labour Market Intelligence (LMI) survey for 2007-8 (Aitchison and Edwards 2008); for the academic sector it was RAE 2008, the sixth Research Assessment Exercise undertaken by the four UK higher education funding councils. Both surveys paint a picture of Archaeology in 2007 in better health than ever before. Indeed, such was the strength of the profession in these two surveys that it is tempting to describe the last decade (roughly 1998-2007) as a golden period for archaeology in the UK.

The economic collapse has already dramatically changed this picture of health for the professional sector in the UK. In the academic sector, its effects have not yet been directly felt, but it is possible that the collapse will instigate a deeper and longer lasting set of changes than elsewhere, because they may fundamentally alter the current drivers or incentives for higher education institutions (HEIs) and academics in departments of archaeology. These changes will occur over the next ten years and grow out of a number of present tensions that are already identifiable. These include the effects of rising tuition fees on students’ perception of the difficulty and value of higher education (HE), falling application numbers, a concern with employability, increased competition for academic posts and the wages and working conditions in the professional sector of archaeology.

Even though these tensions are of long standing, it will be the current economic crisis and its direct impact on the future funding of HE that will instigate change. Since the changes have not yet started it is only possible at this moment to outline the factors that will cause change and the possible change scenarios that might occur. In order to make sense of these, I shall set out the current situation of archaeology in higher education, as well as the basic principles that organise and fund this level of education in the UK. It is important to remember throughout that HEIs in the UK are independently funded and managed organisations; they are also intensely competitive one with another in the UK, and increasingly with other HEIs internationally. The policies and actions they follow are driven by how they can effectively increase their funds and profits, and enhance their reputation and competitive edge.

2 Archaeology in UK higher education, 1997-2007

Between 1997 and 2007, there was a considerable degree of renewed economic investment in the UK HE sector; archaeology, in common with many disciplines, enjoyed a considerable period of growth. This led to an increase in the numbers of academic archaeologists educated and employed; the numbers of students¹, and new departments were created to teach archaeology in universities. Assessments of teaching and research quality completed in this decade reveal a record of excellence in both areas in the UK.

There is no official record of the number of staff by discipline in UK universities. The evidence, however, from the IfA's LMI survey, the RAE 2008 returns, and institutional websites (for departments not submitted to the RAE 2008), makes it possible to say that there were more than 600 individuals employed for the purpose of teaching and research in archaeology in UK Higher Education 2009². Looking back over the previous decade, using the three IfA LMI surveys for 1997-8, 2002-3 and 2007-8 (Aitchison 1999, Aitchison & Edwards 2003, Aitchison & Edwards 2008), and the institutional submissions to the UK's Research Assessment Exercise for 1996, 2001 and 2008 (RAE 2010a, 2010b, 2010c), we can observe a steady rise of more than 35% in total staff numbers engaged in teaching and research (Fig. 1). The age spread and gender balance have remained roughly constant over this period with the average academic archaeologist still being male and in his forties (Fig. 2).

Fig. 1. Numbers of academic staff in archaeology in UK Higher Education.

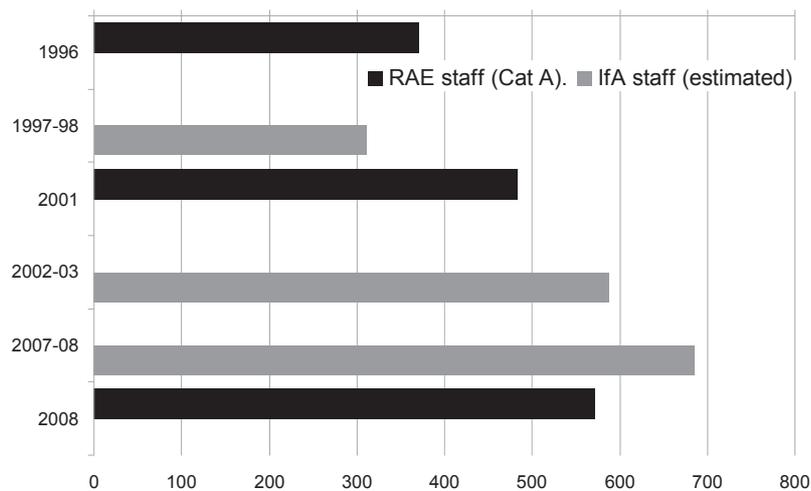
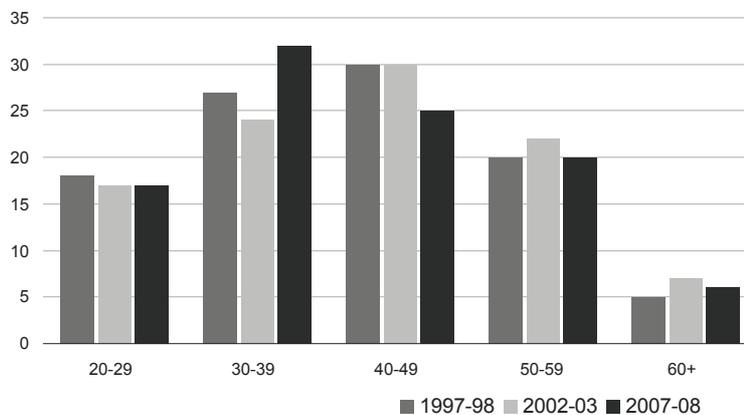
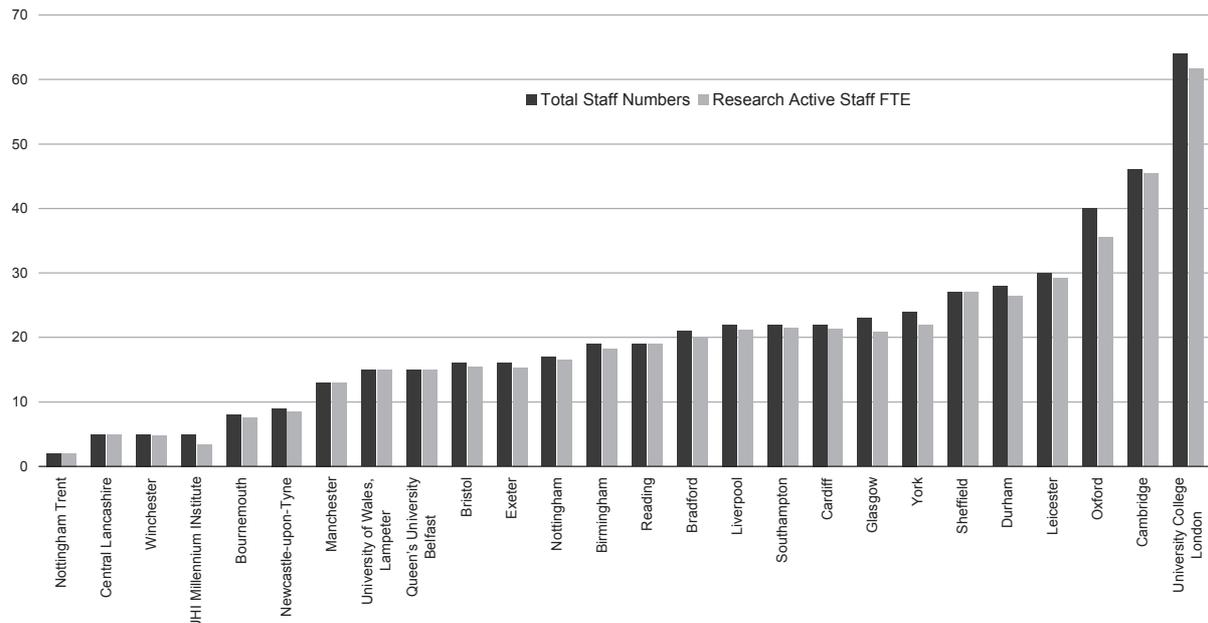


Fig. 2. The age profile for UK archaeologists in Higher Education.



These 600 and more academic staff are spread amongst approximately 30 institutions offering places where students can take a degree in archaeology as a single honours subject. Additionally there are a few other institutions in which students might study Archaeology as a significant component of either joint-honours degree programmes or degrees in related subjects such as Classics. In contrast to many other countries in Europe, archaeology departments in the UK are large in size (Collis pers. comm. June 2006 Conference on Teaching and Learning in Archaeology 2006, Liverpool.). Although a small number of archaeology departments have fewer than 10 full-time staff, many have more than 15 full-time teaching/research staff, with the largest having 64 full time staff (Fig. 3).

Fig. 3. Staff & research active staff numbers in UK departments (RAE 2008).



From outside the HE sector, the activities of teaching and research seem inseparably interwoven. Indeed many in the university sector would argue that what constitutes the 'higher' element of HE is the fact that students learn about their disciplines in an active research environment and from teachers who are themselves undertaking basic research. This is often phrased as 'research-led teaching'. Be that as it may however, a significant feature of the UK HE system is a separation between research and teaching: as activities with different processes of funding and assessment of performance. And just as finance and assessment largely determine the student's experience and her actions in HE, so do the same factors shape and drive the perceptions and activities of individual academics and institutions.

3 The funding and assessment of teaching in higher education

The money that institutions receive for teaching is determined nationally. This comprises a sum of money paid by government (via the national funding councils) for each student as well as tuition fees paid by students themselves. At a national level, the number of HE student places that can be funded is set by government, and institutions must agree on the number of students that they will teach with the funding councils. Within institutions, there are annual student number targets set

per discipline area. In the period from the mid 1990s up to 2007, there was a drive to increase student numbers in HE, and humanities and arts departments were able to increase their student numbers significantly, with subsequent employment opportunities available to them in an enlarging service economy³.

The money from the funding councils is allocated according to the costs of teaching a full-time student following a specific discipline for their degree. The disciplines are grouped into funding bands according to the form of teaching involved. In England and Wales the highest sum is allocated to the band which groups the medical sciences. This is followed by the sciences and engineering, then the laboratory/fieldwork-based social sciences (including geography and archaeology) and finally the library-based humanities and arts (including history, english, classics). In Scotland, however, archaeology is in the lowest band, and students are funded at the same level as english, history and other humanities.

Additionally, in the UK, students have contributed financially to their HE for more than ten years. Between 1998 and 2006, students were required to pay an annual tuition fee of up to £1250 (means-tested against parental income). In 2006 this was changed into a variable but capped fee, with the exact amount set by individual HEIs for each of their degree programmes⁴ up to an upper limit of £3,225 per year (2009-10)⁵. With very rare exception, however, all universities now charge all students the same, uppermost fee. In practical terms, students take out student loans to pay for their tuition fees, that are offered to students by the Student Loans Company - a public-sector organisation⁶. The money to fund these loans is provided up front by the government; graduates repay these loans at reduced levels of interest once they are earning more than £15,000 *per annum*. Any outstanding loan repayments are (to be) cancelled after 25 years.

For HEIs, teaching income is largely capped at a national level. There is little opportunity to increase this income and the only 'penalty' for HEIs is when they accept more students than the places they have been funded to provide. The only other route to increase teaching income is to attract foreign students for whom student places are not capped. HEIs are, therefore, keen to attract such students⁷, and seek to improve their reputation (largely in terms of their research reputation) on the one hand, and, recently, to develop links with foreign universities that might lead to a steady stream of foreign students coming to the UK 'mother' institution later on in their degree.

Between 1991 and 2001, teaching in UK universities was assessed through an exhaustive performance review organised on a subject by subject basis with every department visited and assessed by independent, discipline-specific inspectors. For archaeology (assessed between 1999 and 2001), the overwhelming majority of departments were judged to be 'excellent' in their teaching. The considerable level of resource invested in preparation for these national subject performance reviews led to a modification of the process so that teaching reviews are now conducted periodically within universities in a 'light touch' manner, though with some external contribution. In the UK, therefore, funding for teaching is also not directly affected (either up or down) by the assessment of teaching quality. It is assumed that this will be achieved in an HE market place through the (non-)application of students to particular HEIs and degree programmes. Currently, however, the number of applicants for student places is greater than the number of funded places available.

Finally, the UK has also benefited from the creation of a series of subject-focussed teaching support centres (originally called the Learning and Teaching

Support Network) that are part of the Higher Education Academy. Funding comes from the national higher education funding councils, and, to a small extent, from institutional subscriptions. The Subject Centres work to enhance teaching at a disciplinary level by recognising that individual academics more often than not see themselves as members of a discipline, not as teachers in higher education per se; academics are more likely to engage with individual discipline specialists when sharing and developing best teaching practice rather than with education specialists. The Subject Centres organise conferences and workshops on teaching issues, they produce publications on themes such as the enhancement of employability skills and approaches to assessment; they also fund pedagogical research. Archaeology is supported by the Subject Centre for History, Classics and Archaeology (www.heacademy.ac.uk/hca). The Subject Centres appear to be unique to the UK.

4 The funding and assessment of research

It is unquestionably research that has had the greatest impact on those universities where archaeology is taught. In contrast to their teaching income, however, individual HEIs can significantly increase their income that derives from research, through the receipt of individual research grants (from the UK research councils) awarded to individual academics and research teams, and just as importantly on the basis of the outcomes of the most recent research assessment. These factors are ones that university leaders feel that they can directly influence; they have, therefore, introduced detailed processes to support (and monitor) research grant bids and research assessment outputs and submissions at departmental and individual level. Departments of archaeology (along with Classics and Ancient History) are usually located in the 'traditional universities' (institutions that were recognised by charter before 1992). These universities now largely defined themselves as research-intensive institutions; their research ratings are often advertised as an indicator of institutional quality to potential students, especially those from abroad.

Research grants are highly sought after by HEIs, since they now pay not only the direct expenses for undertaking research, but also the full costs of staff time when working on the research projects, and the indirect costs of supporting a project of research within the HEI (these include running costs for rooms and equipment, the costs for the provision of central services to researchers, etc). They are fully economically costed. Within the humanities and social sciences, the receipt of a research grant can now bring in large sums of money (£200k - £500k), but since the research councils for this area have the lowest level of funding, the success rate for research grant applications is very low. In the humanities and social sciences, therefore, success in the assessment of research quality through the publication of high-quality research outputs is all the more important.

Archaeology departments have been remarkably successful in the Research Assessment Exercises. Until the 2008 review the published research rating given during the RAE was at a department level as a whole. From RAE 2008, however, the research assessment rating was extended down to individual outputs and, therefore, individuals. In the last exercise, RAE 2008, more than £70 million pounds was raised by departments as income for archaeological research (between 2001 and 2008), and of the publications submitted, more than 50% of these at every institution were assessed as being either 'world-leading', 'internationally

excellent' or 'internationally-recognised' in their quality (Fig. 4). Moreover, during this same period, postgraduate research student numbers have increased enormously (Fig. 5), with 745 students completing their doctorate, and another 240 students completing a research masters (MPhil, MRes) between 2001 and 2008.

Fig. 4. Research quality for UK departmental outputs (RAE 2008).

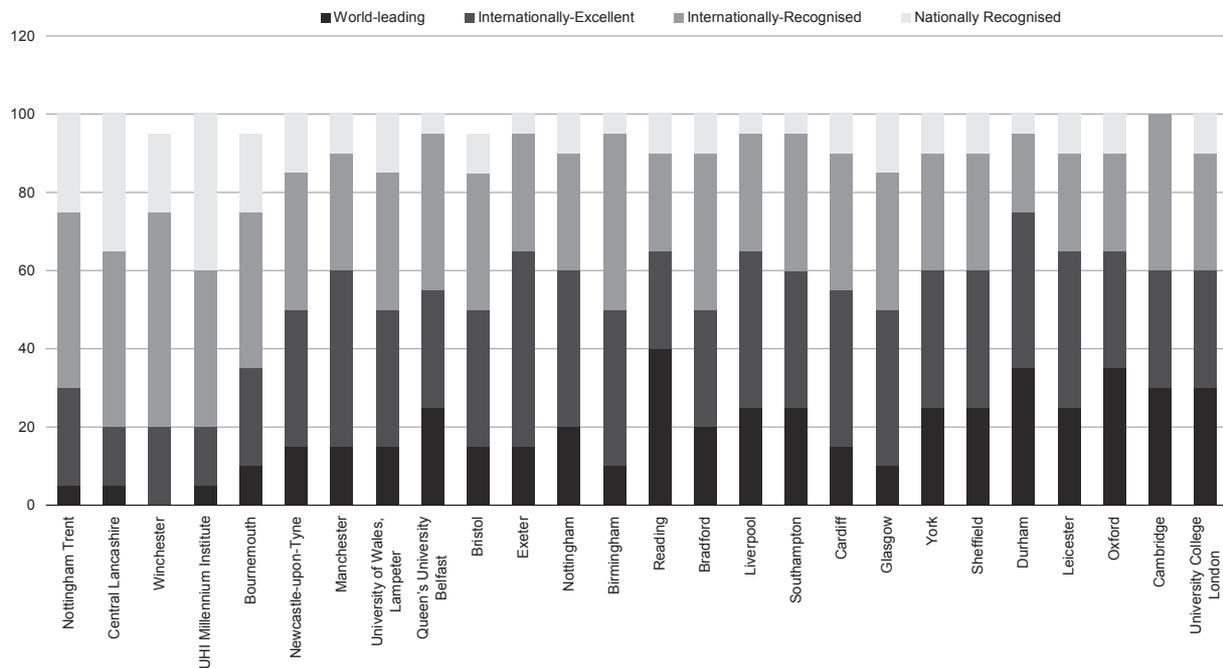
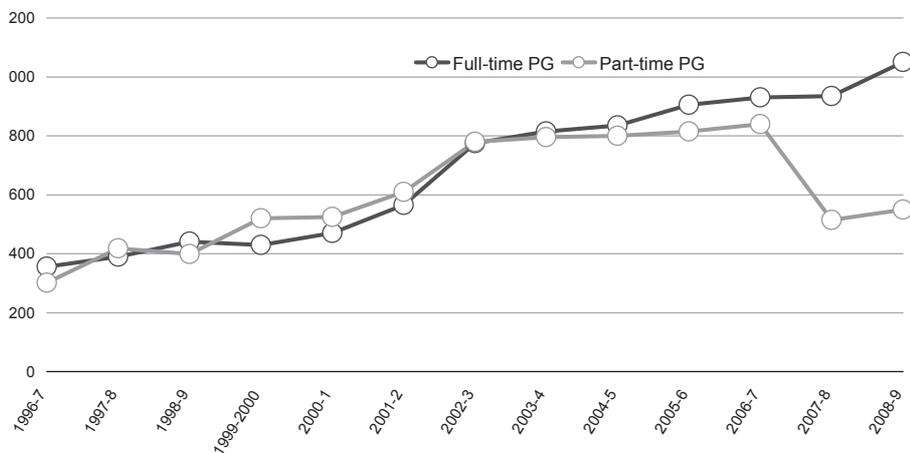


Fig. 5. Number of postgraduate students in archaeology.



Archaeology departments in the UK, therefore, have blossomed in this research assessment driven environment, and they have expanded and modelled themselves over the course of twenty years as units for whom success in the next RAE has been the dominant driver. Success, at a departmental level, in this environment requires the production of research outputs that can be recognised as being of world-leading or international quality, ideally paid for through research grants received from recognised research councils or funding bodies. These outputs take the form of peer-reviewed publications that might be articles in high-impact journals, or monographs (not teaching texts); between 1990 and 2008, archaeological peer-reviewed journals increased in number, and doubled in output to meet this publication need (Sinclair 2009). For individuals to get employment in academia,

they must demonstrate proof of present and future research quality (as measured in publications and grant income), and competition for such positions is now extraordinarily high⁸. In the last audit, RAE 2008, almost all full-time academic staff (in archaeology) were classified as research active for RAE assessment (Fig. 3). Once in post, individual success (if measured by promotion) is usually perceived as resulting from the quality and quantity of one's research outputs, and prior to the last two RAEs, there has been a thriving 'transfer market' (and promotions to assist retention) between institutions for individuals perceived to be valuable RAE assets.

The drivers related to research rather than teaching, therefore, are by far the strongest in the vast majority of universities with departments of archaeology. They directly affect practice at a departmental level, govern success in the acquisition of academic posts, and, significantly, they are also perceived to affect directly the promotion of individual within institutions. Teaching is undertaken, and often delivered well, but it is research that drives change. As a result, academic archaeology has followed a specific trajectory in the last fifteen years, that is quite different to that followed by professional, developer-funded archaeology; and this has led to a wide gulf separating these two different forms of practice. Much, if not most, of the archaeological fieldwork and publication that results from developer-funded archaeology would not be recognised (within an RAE), as "research of world or international quality", the standard to which all RAE publications aim⁹; and archaeologists in higher education have become progressively removed from this developer-funded work, and knowledge of its findings¹⁰. Moreover, archaeological fieldwork projects run by academic archaeologists, and funded as research projects, are driven by their RAE submittable, potential written outputs (usually derived from extensive post-excavation analysis and interpretation), with the result that the field skills of academic archaeologists are also not the same as those of employed in developer-funded archaeology. In such different worlds, there is consequently little opportunity for individuals to move between the academic and professional employment sectors, especially at a senior level. The result is that the vast majority of senior staff in either archaeological sector have little practical knowledge of the driving factors and organisational structures that shape work outside their own area of academia or professional field archaeology.

5 The impact of the economic crisis on higher education

In the professional archaeological sector, the impact of the economic crisis on employment and skills has been both immediate and readily apparent since the beginning of 2008 (see Aitchison in this volume). These impacts can also be related directly to the economic crisis itself: the effect of a significant reduction in the level of development-related construction that generates most archaeological activity undertaken by private contractors. In higher education, the effects of the crisis have been significantly less visible up to the middle of 2010¹¹. There is also a much slower pace of change in educational (public sector) institutions than in the private (professional) sector. This is due to the continuing intake of students, and the (usually) long-term employment contracts for academic and non-academic staff¹² that makes it difficult to reduce staff numbers¹³, and the use of public finance by the previous Labour government, to support the national economy.

Within academic archaeology, however, one clear exception can be seen in the rapid effects of the crisis on university-based archaeological contracting units. Like their counterparts in the commercial sector, these companies have had less work during the crisis; unlike their private competitors, however, universities impose high overheads on these units which makes them less competitive, whilst the financial accounting systems in universities make it less easy for the income from one project to support work related to another. Moreover, as noted above, the publications of these units do not make much impact within the RAE driven HE sector. In the last two years the units at Sheffield, and Manchester have been closed down in their host institutions¹⁴; others are under close scrutiny. The closures of these units will further widen the gulf of knowledge between institutions and the professional archaeological sector. It is possible, however, that archaeological contract work may survive in the universities to the extent that it can take the form of a specialist post-excavation service that may lead to research assessable outputs, or in the form of 'consultancy', especially for foreign governments, where the international expertise of UK-based academics may help.

The next casualty of the economic crisis in academic archaeology is likely to be the Subject Centre for History, Classics and Archaeology (along with the other twenty three Subject Centres). The Higher Education Academy is funded directly by the funding councils who have already stated that the Higher Education Academy will see its level of funding reduced by at least 30% in the next three years. The structure of the HEA must change and it is more than likely that the Subject Centres will be reduced in number, with perhaps a range of disciplines brought together within a unit dedicated to the Humanities and Social Sciences.

Beyond this the picture is not yet clear. Writing in the spring of 2010, it is evident that higher education sector is about to experience a huge reduction in the level of public funding that it receives (from August 2010), caused by the need to reduce the large public deficit developed during the crisis. It has been estimated that this drop in financial support from the public purse will be as much as 25% over the next three years (Universities UK 2010a: 13). This reduction will affect both the level of direct grant support to institutions to pay for teaching and research, as well as the money available to the research councils available for research grants. In addition to a reduction of funding level direct to higher education institutions and researchers, both government and institutions believe that the current tuition fees system is unsustainable; for government the upfront costs of providing the money for student loans are too high¹⁵, whilst institutions claim that the current level of tuition fees needs to be raised so that, along with other sources of income, universities can recover the full costs of tuition (Universities UK 2010a:21). Moreover, the higher education budget will not be protected from cuts, unlike that for earlier years education. Higher education is still a relatively restricted form of education in the UK¹⁶, and both government and institutions have consistently argued that the possession of a degree increases the average lifetime earnings of graduates¹⁷. A university education is, therefore, to an individual's own benefit, and should be paid for. In November 2009, an independent review of higher education funding and student finance (the Browne Review) was launched, to report by September 2010. It is widely assumed that this review will recommend that tuition fees should be raised from their current level, and possibly uncapped (allowing universities to charge any level of tuition fee that they feel the market will allow). It is also assumed that the review will recommend changes to

the current student loans system, to reduce the costs of these loans to government. This might mean that the tuition fee s loans would be paid back with market rates of interest, or perhaps provided by private banks rather than the government-backed, Student Loans Company¹⁸.

With these changes in mind it is possible to make a number of predictions about the actions and expectations of government, institutions and students based on current practices in UK higher education. It seems likely that:

Government (via the funding councils and the research councils) will;

- reduce the HE budget,
- target some HE funding towards those subject areas that are of national importance for the provision of essential skills¹⁹,
- expect universities to ensure that all students graduate with the ‘necessary skills’ able to secure employment in graduate level jobs,
- expect universities to provide a high quality of student experience (measured by student satisfaction rates in national surveys),
- target research funding for research to universities that are most successful as research institutions, and to areas / projects that will most clearly benefit the national economy.

Institutions will;

- look at their current costs and make cuts where necessary / possible,
- maximise their current research and teaching strengths in the STEM subjects and support their future development,
- emphasise and attempt to enhance the quality of the student experience at their own institution,
- become more efficient in teaching students, with greater use of e-learning, and other more structured forms of self-directed learning by students,
- raise extra teaching-related income by reaching out to wider students catchments through the recruitment of foreign students (especially non-EU students) on campus, by increasing the development of greater distance-learning provision to recruit students who are based off campus, and by offering CPD provision to employers,
- generate extra income through research outputs (largely in the form of intellectual property) and paid consultancy,
- recruit new staff / replacement staff more carefully to support their longer term strategic aims defined by projected teaching need and research income generation.

Students will;

- have to pay more in tuition fees for their higher education,
- decide whether higher education is a worthwhile investment for their future, based on absolute need (medical training for example), future employment and predicted salary according to degree programme followed and institution attended, degree of parental support, institutional support where available,
- expect a clear enhancement of their employment prospects after graduation, and choose their degree course, and university with this in mind,
- have clear expectations about the quality of their student experience at university,
- seek to reduce their overall costs (tuition fees, maintenance costs, and lost income) where possible through paid work or residence at home.

At a local, institutional level the effects of the economic crisis upon individual departments of archaeology are much more difficult to predict. Every university is autonomous, and can adapt in its own way depending on its currently perceived strengths and future prospects. There are however, a number of nationally identifiable trends in archaeology that can be identified and these will determine the range of the longer term effects of the crisis.

6 Possible trends ahead

A serious problem for archaeology is the declining number of applicants for degree programmes. From the early 1990s until 2000, the number of applicants for archaeology degree courses in archaeology increased markedly (Fig. 6). This was almost certainly a result of both a national policy to increase student numbers in higher education combined with an increased exposure to archaeology itself caused by television programmes such as *Time Team*, and *Meet the Ancestors*. From 2000 onwards, whilst institutions have been able to fill their places in archaeology (or within the schools of faculties within which archaeology exists), they have done so from a much smaller number of applicants (Fig. 7).

Fig. 6. The number of male and female students studying archaeology (V4** degree codes).

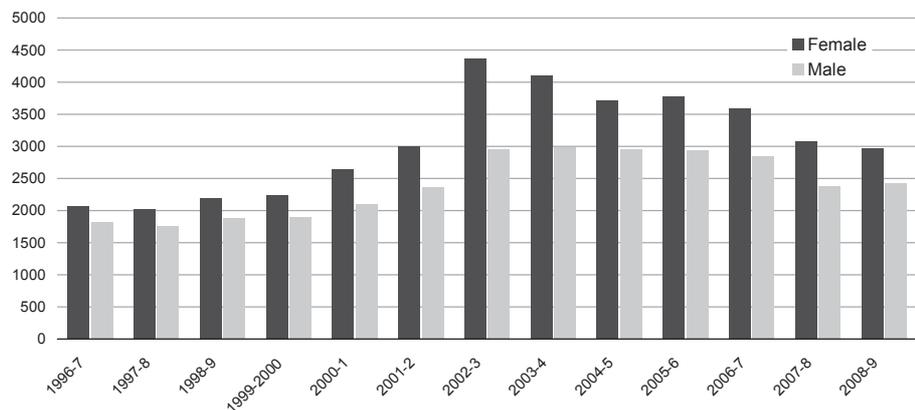
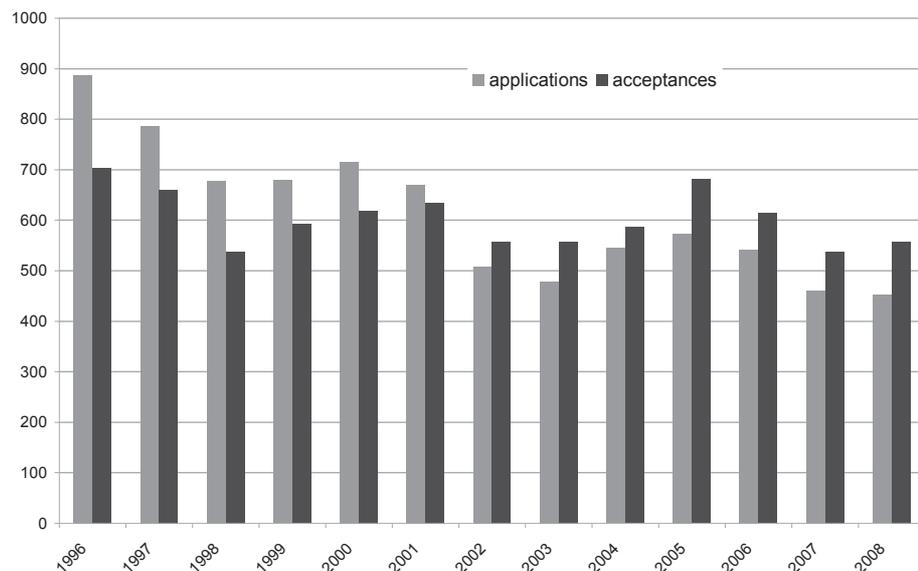


Fig. 7. Numbers of applications and acceptances to archaeology degrees (V4** degree codes).



The reasons for this decline are multiple. It seems likely that the (reduced) television presence of archaeology no longer attracts the extra applicants it once did. The relative absence of archaeology as a common subject of study pre-higher education, means that students must be prepared to 'make a leap of faith' in studying a subject they have no direct experience of, and therefore cannot predict their potential degree level success / future employment potential. Finally, students, parents, and careers advisors worry about future employability since they do not clearly understand the knowledge and skills that are taught in archaeology in HE, and when it is also clear from web sources that getting a job in archaeology is both competitive, often poorly paid and usually short-term.

At the moment, there is demand for perhaps as many as 250,000 more university places than there is available funding²⁰. Even though the number of university applicants and enrolments in England rose following the rise of tuition fees in 2006 (Universities UK 2010b), this will surely change if there is a significant increase in tuition fees. A recent survey, commissioned by the Sutton Trust, has shown that 80% of 13-15 year old children state that they are likely to go to university; but, if tuition fees increase to £5,000 per annum this percentage drops to 67%, at £7,500 per annum it drops to 45%, and at £10,000 the figure is just 18% (Sutton Trust / IPSOS MORI 2010). Student place capacity may then outnumber potential student numbers, and the competition for students will become intense. In addition to falling undergraduate student numbers, we should also expect to see a significant reduction in postgraduate student numbers. In the past decade the numbers of doctoral level students, the research income per staff member and the research ratings of archaeology departments, by comparison with other departments in the arts and humanities, sheltered archaeology departments from the effects of falling student numbers. At the moment archaeology departments are producing very many more students with doctorates than can find academic positions. Without the prospect of an academic career, there is much less likelihood that students will want to continue onto doctoral level study.

With lower student numbers, and with a lower research grant income for archaeology departments, it will be very difficult for them to maintain their current staff numbers. In the immediate future it is likely that we shall see the posts of retiring staff left unfilled, or 'transferred' to other disciplines with buoyant student numbers; this will leave some specialist areas uncovered, requiring staff to teach outside their current range. According to the most recent LMI survey approximately 7-8% of academic staff in archaeology were within 5 years of retirement in 2007 (Aitchison & Edwards 2008: Tables 34 & 35). If the reduction continues we can expect redundancies to occur.

Would a reduction in the number of archaeology graduates be a problem? Even though the professional-commercial and academic sectors have largely acted independently of each other in the last twenty years, reduced student numbers and staff in universities will have repercussions in the professional sector. In the UK, a career in professional archaeology requires a university degree²¹, even though in all previous labour market surveys, employers have commented that archaeology graduates were inadequately trained for employment in professional archaeology (usually lacking field skills experience, specialist skills in areas such as desk-based assessment, as well as a real understanding of the professional archaeological sector). Moreover, many archaeologists leave professional field archaeology after just a few years to pursue other career paths. This is not a problem at the moment: there are more archaeology graduates than posts and there is room for labour

movement. It has also been argued that the production of many more archaeology graduates than the actual number of employment places has had a damaging effect on the professional sector because of the surfeit of applicants for even the lowest paid jobs (Aitchison 2004). A reduced archaeological graduate output, resulting in a closer alignment between the number of archaeology graduates and places in the labour market for professional employment would appear to be no bad thing.

Unfortunately this assumes that enough archaeology students will still seek a career in archaeology – which might no longer be the case. In the UK, the perceived reputation of the university at which you study is important: the same children interviewed for the Sutton Trust's survey (2010) noted that they would not necessarily choose the cheapest degree programmes, but evaluate the perceived income advantage conferred by studying at different universities. At the moment, the starting wage in archaeology is not as high as that available to new graduates in many companies²². Yet, archaeology, as noted above, is largely taught in the traditional universities commonly perceived by students, parents and many graduate recruiters to offer a better standard of education than the new (post-1992) universities, and therefore a greater graduate potential. These older universities will almost certainly charge the highest tuition fees. It is very possible that a career in professional archaeology, following a degree at a traditional university, would look remarkably unattractive without a significant increase in wages to help pay off the debts incurred. This problem can only be exacerbated if the current loans repayment system is changed as well. If the overall number of archaeology graduates decreases, private contractors may no longer be able to entice new graduates into the profession.

Within the traditional, research-intensive universities, a new set of drivers developing on the current language of transferable skills and employability could soon have greater influence than those created by the old RAE process (at least within disciplines in the humanities and social sciences), even if the research drivers will almost certainly not be forgotten. The large majority of archaeology graduates in the traditional universities (those without sufficient parental financial support to pay for the majority of their higher education) will need to seek employment that can both pay off the costs of their education as well as offer them a reasonable standard of living. To find these jobs these graduates will need to sell their transferable employability skills. Institutions will be keen to emphasise transferable skills within the curriculum in order to meet the demands of government above and students below and maintain their student income. The research-intensive institutions that (currently) offer archaeology degrees will also need to show that their graduates can find employment in well-paid sectors. With a reduction in the overall number of graduates in the UK, graduate employers will further target the graduates from universities with a high quality reputation.

Archaeology graduates with well-taught numeracy and IT skills could become quite attractive and sought after, and Departments of Archaeology will need to revise their curricula accordingly to emphasise these skills so as to maintain student numbers.

If the above prediction is correct, departments of archaeology will need to maintain and ideally increase undergraduate numbers on archaeology programmes of study, whilst archaeological employers will need to develop new relations with universities through which to train and develop the next generation of professional archaeologists. A number of possible ways in which this might occur can be suggested.

Departments of Archaeology will need to;

1. properly highlight and develop the large range of transferable skills that they believe are present in an archaeological education, as set out in the Qualification and Assessment Authority's subject benchmark statement for Archaeology (QAA 2007). In particular the skills for IT, data handling and numerical literacy, and teamworking, as well as business and customer awareness (which might be taught through an understanding of professional archaeological practice) are all important transferable skills identified as essential to graduate employability by the UK's Confederation of British Industry (CBI 2009) and which enable archaeology to stand out from other humanities degrees.

2. to emphasise the scientific side of their discipline, as a means by which young people might be attracted into developing careers in science. This would allow a 'rebranding' of archaeology as an 'applied science'.

3. (in the new universities) concentrate on teaching for professional archaeology, allowing the traditional universities to go their own way. This would build some links between higher education and employment, and might be attractive to students if the tuition fees in these universities were lower.

Archaeological Employers could;

4. increase significantly the wages of professional field archaeologists to make such posts attractive in the context of the new cost framework for higher education.

5. recruit their labour force from other countries where the costs of an archaeological education will be less of an individual financial burden

6. open up professional archaeological employment to those without a degree in the subject. The NVQ in Archaeological Practice would then provide the framework for training and continuing professional development for these 'apprentices'. This, however, transfers the responsibility for archaeological training to other providers not yet in existence, or to employers in the form of apprenticeships.

The current system of archaeological training could be

7. transformed to forge a new working relationship in which students would balance work in contracting firms whilst at the same time studying for a degree in archaeology. Some of the credit (assessment) for the degree would then be given to work-based learning. Although there is already an NVQ in Archaeological Practice, within which credit is already gained for work-based learning, a degree from a traditional university is likely to be a more attractive qualification for such students since it would offer future employability skills beyond one sector of employment. This would be of interest even to students not planning to continue into professional archaeology since work experience itself enhances employability.

In sum, whatever happens, there can be little doubt that we are entering a very significant period of change in which the economic crisis and the need to reduce public spending might dramatically transform the relationship between commercial and academic archaeology for the coming generation.

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Notes

- can be found on the BBC website (available at: <http://news.bbc.co.uk/1/hi/education/3013272.stm>). For official information use the UK Governments own DirectGov website (available at: <http://www.direct.gov.uk/en/EducationAndLearning/UniversityAndHigherEducation/StudentFinance/index.htm>)
6. Since 1990, students have also had to pay the costs of their own maintenance whilst in higher education. Maintenance loans are available to students from the same student loans company for this purpose, though payable immediately after graduation and with interest.
7. This is especially the case for students coming from beyond the European Union; the tuition fees for these students are the highest.
8. In two recently advertised sets of academic positions, the University of Liverpool received more than 230 applicants for a one position (though widely defined in research/teaching remit), whilst the University of Bournemouth received more than 140 applications for posts quite tightly defined in teaching/research areas. Many of these applicants have years of research experience and output after the completion of their PhDs.
9. Only a very small number of staff in archaeological field units based in universities are entered into the RAE.
10. This has also not been helped by the fact that much of this developer funded work has remained unpublished as grey literature.
11. The one visible change to date has been the removal of government tuition fees support for students studying degrees that are equivalent of lower in level to a qualification that they already hold. This has effected support for students retraining for a new career, and two institutions in particular that have particularly attracted this type of student because of their use of distance learning (the Open University) or 'after hours' teaching (Birkbeck College).
12. I do not include the numerous fixed-term teaching-related appointments often to facilitate a period or research leave for academic staff.
13. Most universities have already been offering 'voluntary severance' schemes to reduce the numbers of their more highly paid staff, though few staff from within the academic community in archaeology seem to have taken up this option.
14. Part of the old Manchester University Field Archaeology Unit is now based at the University of Salford. See note 2 for more details on these university-based units.
15. In a recent interview published in the Guardian newspaper, the minister for Higher Education, Mr David Willets – the current Minister of State for Universities and Science – described the current funding system for higher education in the United Kingdom as "unsustainable", and "a burden on the taxpayer that had to be tackled". (The Guardian, 9th June, 2010; available at: <http://www.guardian.co.uk/education/2010/jun/09/david-willets-students-tuition-fees>).
16. The most recently published figures, for the academic year 2007-8, show an average participation rate in Higher Education of 43% for English students aged between 17 and 30: balanced at 38 %for males and 49% for females (DIUS 2009).
17. In 2007, a research report commissioned by Universities UK and completed by Price Waterhouse Coopers estimated that a graduate on average receives a premium of £160,000 over a lifetime (Universities UK 2007: 5). This figure, however, varies significantly according to the occupational area that the graduate enters; it varies from a premium of £340,000 for graduates in Medicine and Dentistry, to £51,549 for a graduate in the Humanities to just £34,949 for a graduate in the Arts. Significantly, these figures do not take into account any of the costs of higher education, or any 'lost' earnings that might have been accrued whilst a student.
18. The idea of a graduate tax to pay for HE is consistently rejected because of the large immediate-term costs of moving to such a system, and the fact that it would introduce an hypothecated tax.
19. Science, technology, engineering and mathematics (usually called the STEM subjects) have already been identified as nationally important skills areas deserving of enhanced support. (DfBIS 2009: 12)
20. Professor David Green, the Vice-Chancellor of the University, has given this estimate in an interview with the BBC on 26th May, 2010. (Report available at: <http://news.bbc.co.uk/1/hi/education/10156398.stm>)
21. The most recent Labour Market Intelligence Survey indicates that of 141 individuals returned in their survey who were both employed in archaeology and below the age of 30, all but two individuals hold a university degree or higher qualification (Aitchison & Edwards 2008: Table 42).
22. The average starting salary for a graduate is £25,000 in the UK (Association of Graduate Recruiters – Winter Survey 2009. Cited in Xperthr HR online employment intelligence. At: <http://www.xperthr.co.uk/blogs/employment-intelligence/2010/02/graduate-starting-salaries-to.html>. Consulted on 6th July 2010.), whilst the average salary for all archaeologists in the UK is £23,310 (Aitchison & Edwards 2008: 13)