The employment of social science PhDs in academic and non-academic jobs: research skills and postgraduate training

A report prepared for the ESRC Training and Development Board

by

Kate Purcell, Sue Durbin and Stella Warren
Employment Studies Research Unit
Bristol Business School
University of the West of England

and

Peter Elias, Heike Behle and Rhys Davies
Institute for Employment Research
University of Warwick

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Executive Summary

Our brief for this project was to review the needs of non-academic employers for highly-qualified social scientists. As the research progressed and as we discovered more about the career development and employment outcomes of those who had completed PhDs, we amplified the scope of the investigation to encompass broader issues that need to be considered by those responsible for the provision, coverage and delivery of postgraduate research programmes in the social sciences. The title of the report reflects this wider investigation.

Successive studies of the destinations of social science research students from the early 1980s onwards have indicated that for the majority, acquiring a PhD has provided entry to an academic career, and it remains the case that social science PhD-holders are more likely than those with doctorates in other broad discipline areas to remain in academia. However, a substantial minority – between a third and half, according to different sources and classifications – obtain employment in other sectors, and this proportion is likely to grow rather than diminish in the future if postgraduate research programmes expand as projected. In addition, whether or not they were currently working in higher education, the majority of social science PhD holders had had some employment experience outside the academic environment and particularly in some disciplines, the line between academic and non-academic research labour markets is less distinct than in others.

Previous research findings suggested that non-academic employers reported that recruitment of such highly-qualified social scientists was largely by default, as part of their general graduate recruitment, on the basis of skills, attributes and potential revealed during the selection process rather than because of their doctorates and - in most cases – with little concern for the subject of their study. Even among independent research institutes - one of the main recruiters of social scientists with research degrees outside the education sector - employers reported a preference for candidates with Masters' degrees rather those who had gone on to complete a PhD.

The current project was undertaken with reference to four significant developments that have changed the postgraduate labour supply in recent years: participation in higher education has continued to grow, both of full and part-time students; postgraduate education has expanded generally, extending the pool of postgraduate-qualified labour market entrants, particularly at Masters' degree level; the numbers of students completing specialist social science research methods degrees has grown substantially; and research skills training within social science doctoral programmes has been progressively transformed by a series of initiatives that have changed perspectives and practices related to the provision of postgraduate research training within academia. The effect of these latter changes is only now beginning to take effect and it is too early to assess their direct impact on the skills developed on research degree programmes and PhD-holders' employment trajectories, but they are the culmination of trends that had already begun, to ensure that increasingly rigorous research and related professional training underpins research degree scholarship in the social sciences.

The objectives of this research were to investigate where and why recent social science PhD-holders had obtained employment outside higher education, how far those who were in such employment were using the skills and knowledge developed as postgraduate research students, how far such research skills are sought by employers beyond academia, how far non-academic employers are aware of changes in the research degree syllabus and how such changes have affected (or are likely to affect) their recruitment of highly-qualified social scientists.

To address these issues, we have drawn on a range of existing sources and undertaken new investigations of the early career experiences of social science PhD-holders. Using existing sources we have conducted the following analyses:

- an investigation of employment trends among highly-qualified social scientists revealed by evidence from the national Labour Force Survey (LFS);

- reanalysis of previous studies on the employment outcomes of those who have obtained PhDs in social science and other discipline areas;

- analysis of relevant data in two recent national longitudinal surveys of UK graduates who completed undergraduate programmes in 1995 and 1999, within which it has been possible to identify sub-samples who went on do postgraduate research degrees; and

- targeted analysis of national first destination statistics for recent cohorts of postgraduate course-leavers compiled by the Higher Education Statistic Agency (HESA).

In addition, three further investigations were undertaken:

- an online survey, conducted in the first half of 2005, of ESRC-funded graduates who had completed PhDs between 1998 and 2002;

- a programme of follow-up interviews with targeted samples of social science PhD-holders, mainly in non-academic employment, selected from the 1995, 1999 first degree cohort surveys and the survey of 1998-2002 PhD completers; and

- a programme of interviews with employers outside higher education who had recruited social science PhD-holders identified in the three surveys mentioned above, supplemented by a wider investigation of graduate employers experience of and attitudes towards the employment of highly-qualified social scientists.

Social science PhD-holders: who, where, why?

According to recent UK labour force statistics, there are about 20,500 people with a PhD in either a social science or a business studies subject, two-thirds of whom are male, and most of whom are in employment. The majority of social scientists with a PhD work in the higher education (HE) sector, but over 40 per cent work outside academia. The major non-academic employers of social science PhD graduates are in activities related to research and development (including other business activities), public administration and defence, health and social work; manufacturing; and secondary and further education.

Graduates who completed science based first degrees are more likely than others to go on to postgraduate research but the proportion of social scientists who go on to study for a PhD is around the same as of those who have studied education, medicine, arts and humanities. As in other discipline areas, social science graduates with first class honours degrees had a greater propensity to enter postgraduate studies than those who had achieved lower undergraduate degree classes and were more likely to do so directly or soon after completing their first degree, but unlike natural scientists, social sciences graduates continue to embark on PhD programmes for some years after graduation and employment experience, so that the average age of those on social science doctoral programmes is higher than for postgraduate doctoral students as a whole.

Reasons given by social science PhD-holders for continuing HE studies were predominantly to develop more specialist skills. Comparison of social science graduates with and without a PhD revealed significant differences in key values: the lesser importance to them of high financial rewards and job security, along with greater concern with job satisfaction and the importance of doing socially-useful work. PhD graduates placed greater emphasis on values related to the intrinsic character of work and less on values related to extrinsic conditions of, or rewards from, employment. For those who embarked on careers in higher education, this may reflect an elective affinity between values and outcomes, or it may reflect a realistic assessment of the career choices they have made.

In the case of the 1999 graduates surveyed, evaluation of the relevance of their postgraduate training for their current employment was generally positive, whether or not they currently

worked in higher education teaching or research and they were generally satisfied with their experience of postgraduate research programmes – although particular gaps in provision were consistently reported, as the report reveals. Nevertheless, around 80 per cent reported that they would do the same course again and only 3 per cent said that they would not, with hindsight, complete a PhD programme if choosing again. The vast majority of both social science PhD holders inside and outside academia revealed that their current job was exactly the type of job they wanted.

The 1998-2002 survey of ESRC-funded PhD completers

The evidence from the online survey of 1998-2002 ESRC-funded PhD completers reinforced the findings from our analysis of information provided by those among of the 1995 and 1999 graduates who had gone on to study for a PhD and enabled us to ask questions related specifically to the relevance of their PhD studies. The sample obtained from the online survey under-represents those who gained their PhDs in the early part of this period and because of the methods used to locate and contact PhD holders, it probably also under-represents those working in non-academic jobs. Typically we would expect to find between 30 and 40 per cent working in non-academic jobs. The achieved sample records only 26 per cent so employed, almost certainly because it proved considerably easier to locate those working in academia than those who had moved away. Despite these shortcomings, the information this survey provides is, in our opinion, reasonably indicative of the types of jobs within which social science PhDs are working, and reinforces the findings from the other sources investigated. Crucially, it provides much-needed information on the skills that were developed and the training they received during their PhD studies, contrasting these with the skills required in the jobs they held some three to six years after completing their PhDs.

We were particularly concerned to investigate the extent and relevance to employment of the skills and training the graduates had received on their PhD programmes, so we asked for information across a wide range of skills, drawing on the recommendations of the Roberts review in our formulation of questions. Consequently, these included questions about their knowledge of specific research methods and development of research skills, but also covered more general professional research-related skills; research management, team working skills and career development skills. We asked about the extent to which they had received formal training in each skill area as part of their PhD studies and the extent to which these skills were developed in the process of undertaking their PhD. Importantly, we enquired also as to whether these skills were *required* (as opposed to *used*) in their current jobs. We sought to assess the extent to which the skills required of highly-qualified social scientists in academic and non-academic employment were similar or different.

In terms of specific *research-related skills*, both academic and non-academic job holders reported similar requirements in their jobs for a wide range of research relevant skills. On the whole, these had been developed in the course of their PhD studies rather than provided via formal training courses and events. Given that this cohort of PhD completers undertook their studies prior to the adoption on postgraduate programmes of recommendations arising from the Roberts review, this is unsurprising. However, the strong employment requirements for such skills highlight the importance of formal training in these areas. We note also that skills related to the collection, interpretation and presentation of data (both qualitative and quantitative) were reported as employment requirements by both academic job holders and those in non-academic employment, yet these are not reported as having been provided or developed to the same extent in the course of their PhD studies. The findings reveal a clear demand for formal training associated with the identification of training needs.

In the case of *more general/transferable professional research skills*, two areas stand out as being very high in terms of job requirements, yet were not formally developed during PhD studies. These are project management skills and leadership skills. Formal training in these areas was virtually negligible and, unsurprisingly, in a high proportion of cases was not developed at all in the course of studies. However, nine out of ten respondents in both non-academic and academic jobs

stated that these skills were required by their employers. For research management and team working skills, both those in academic and other employment reported that such skills were strong employment requirements, yet the incidence of formal training for such skills was very low. Equally, in the case of skills relating to career management, development and personal progression (entrepreneurial skills and what we classed as 'self-promotion' skills – CV writing, press and media relations, image-building), the requirements of the jobs held were high, whilst training and development had been in short supply. Those in academic jobs complained that research management and career management skills - crucially guidance in publishing research findings and applying for research funding - had not, generally, been adequately developed on their PhD programmes. Short intensive courses on particular aspects of research methods or research skills, mostly held externally, had been found to have been particularly useful. ESRC Postdoctoral Fellowships were also cited as having provided a valuable bridge to enable recipients to develop the potential of their PhD studies effectively.

The PhD-holder interviews

The interviews with respondents amplified this picture of the gap between skills acquired on programmes and skills required in employment. In accordance with our research brief, we predominantly interviewed PhD-holders working in non-academic jobs. These covered a range of public and private sector occupations, ranging from the specifically-vocational occupation of clinical psychologist through to more general employment in management consultancy and government service policy administrators. However, the overwhelming majority of social science PhD graduates employed outside academia worked in research specialist occupations and contexts, involved in the conduct or evaluation of research. Among those interviewed, we spoke to a local government research officer, the design and research manager for a large multinational ICT organisation, market and social research agency researchers, a sociologist working for a development aid evaluation consultancy, and economic analysts working for the World Bank and other large financial organisations. Motivation to study for a PhD ranged from specifically-instrumental career-related orientations, as in the case of those seeking employment as academics or as clinical psychologists, to those who had drifted into higher degree study, having enjoyed their undergraduate programmes, because they didn't know what to do after obtaining their good first degrees. Over half had clear ideas of the employment they aspired to at the start of their programmes and the majority had, when they reached the completion of the PhD.

The interview findings echo those reported by the online survey sample. Those interviewed reported general satisfaction with the technical and analytical research skills that they had developed, although several felt that they had been allowed to concentrate too narrowly on the particular methodologies they had used in their own research which, with hindsight, had led them to complete their PhD programmes with skills and knowledge gaps that they regretted. In particular, quantitative methods and statistical techniques were repeatedly referred to as having been inadequately developed as postgraduate students, and it is perhaps not surprising, given the targeting of respondents in commercial research jobs, that focus group methodology also cropped up as an area of research competence that would have proved useful in subsequent employment. Just under half of those interviewed had received research methods training in both quantitative and qualitative methods, and less than half had had any formal training in research management, project management skills or communications skills. Only a handful had had any formal guidance in career management skills. However, the majority perceived that the skills and knowledge that they had developed on their PhD programmes had enabled them to access the jobs that they had obtained subsequently – in particular, particular competences in research methods and the analytic skills they had developed.

The employer interviews

The employment outcomes of those with social science PhDs is the most reliable indicator of the demand for such highly-qualified employees outside academia, but it was important to investigate employers' perceptions of the extent to which they sought and/or recruited PhD graduates, and

what, when they did so, they considered to be the skills and attributes they were 'buying'. We identified employers who had taken on PhD-holders in the 1995, 1999 and 1998-2002 PhD-holder samples and approached a sample of the relevant graduate recruitment or human resource managers in these organisations, sometimes with the help of the PhD graduates we had interviewed, to request an interview. It is an interesting finding that the majority of these did not perceive that they had recruited such employees and, where they *did* recognise that they had done so, responded that they did not require applicants for the jobs in question to possess and PhD and, very often, were unable to identify who, among their employees, had such qualifications. It was clear that employers fell into two camps: those few that specifically targeted PhDs and appointed highly-qualified candidates to jobs for which a PhD was pre-requisite, and the majority, who had appointed PhD-holders as part of their general graduate recruitment. We discovered, as we had done in a previous investigation nearly ten years ago that (apart from a few particular occupational areas that might be labelled PhD *niche* occupations such as academic research jobs, economist research posts in the finance sector and clinical psychologist jobs in the health service and local government), that most of the employers who had recruited candidates with PhDs had not sought to do so and regarded possession of a PhD as, at best, a bonus.

Those who had sought to appoint PhD-holders also fell into three categories: small specialist research agencies and consultancies where the employer sought 'all round' research skills, project management skills and excellent interactive skills; employers who sought particular technical and specialist analytic skills and knowledge – to fill vocational roles such as clinical psychologist or be the psychometrics expert in the human resource management department; and large organisations, generally global or with a global remit, who required highly-specialist expertise in economics or development. In the case of most of the organisations employing PhD-holders in research posts, the concern of recruiters had been to identify candidates with research skills, project management skills and excellent self-management and communication skills – and they generally did not believe that PhD-holders were likely to possess these to a greater extent than job applicants with social science Masters' degrees. Skills shortages and gaps reported by PhD recruiters were a mirror-image of the deficiencies reported by the PhD graduates: quantitative research skills and statistical competence and project management skills. In the case of the larger organisations that recruited substantial numbers of recently-qualified PhDs and ran PhD internship schemes, they were less concerned about the latter, which they saw as part of the training more appropriately developed on their programmes. On the other hand, the accounts they gave of their PhD programme selection procedures, applicants with already-developed project management and research-related skills were clearly more likely than others to be appointed.

In the case of the non-academic social and market research organisations who recruited postgraduate researchers but did not particularly seek PhD-holders, both the representatives interviewed commented on the improved development of research skills on social science Masters' programmes and welcomed current initiatives promoted by the Research Councils to promote higher standards of research methods and professional research training on social science postgraduate courses. All of the employers interviewed valued the skills that PhD programmes are increasingly concerned to develop: research and analytic skills, project management skills, communication skills and the capacity to interpret and conduct rigorous evaluations of evidence, but most were unaware of recent changes in UK PhD research training programmes. There was a general assumption that completion of a PhD indicated possession of initiative, intellectual ability and the capacity to work autonomously, but there was some concern that team-working skills and commercial awareness were less likely to have been developed. In several of the organisations, the manager interviewed stated that social scientists with PhDs were often appointed to middle-management jobs, but the fact that they had three or more years employment experience was more important than their possession of a doctorate.

Implications of the research

A number of findings are noteworthy and relevant to the current debate about the state of postgraduate training for social scientists. Before listing these, it is worth considering a more general issue about academic versus non-academic employment. A PhD in the social sciences is viewed by many higher education institutions nowadays as a prerequisite for academic employment, whether in a post which is primarily research orientated or one devoted principally to teaching, and it remains the case that the majority of those embarking on PhD programmes in these subjects do so with an academic career in mind. Is much non-academic employment, then, a consequence of an oversupply of highly qualified and trained social scientists?

We found little evidence to this effect. While fewer of the social science PhDs who responded to this survey reported that they were in employment related to their long term plans than was the case for those in academic employment, those in non-academic jobs reported significantly higher salaries, other conditions of employment which they found attractive, better job security and the fact that such jobs offered them the chance to develop new skills compared with those in academic jobs. When asked if they had experienced difficulty in obtaining employment, only 12 per cent of those in non-academic jobs stated that this had been the case, compared with 20 per cent of academic job holders. When asked to report on levels of satisfaction with a wide variety of aspects of their jobs, the non-academic job holders reported higher levels of job satisfaction on virtually all aspects apart from the flexibility of their working arrangements. None of these findings is consistent with the view that those in non-academic jobs are 'frustrated academics'. On the contrary, they appear to be making good use of their skills and training in these jobs and deriving significant benefits from so doing.

The employer interviews revealed that non-academic employers who seek those with social science PhDs are satisfied, on the whole, with the quality of the pool of candidates from which they recruit and, where they recruit internationally, see those who have studied on the UK PhD programmes they target as possessing most of the skills and attributes they require. Such employers were well aware of the Roberts Review innovations and welcomed them. Among the UK employers who sought employees with social science research skills for research and research management posts in social and market research, industry and commerce, we found little awareness of what research degree programmes entailed and their view of PhD programmes was that they added little (in terms of their needs as employers) to the skills developed on Masters' courses and might involve narrower research methods expertise. We conclude that the profile of current research degree training and professional development needs to be raised among employers outside academia.

Chapter One

Post graduate research training and employment – the issues

1.1   Background

Successive studies of the destinations of social science research students from the early 1980s onwards have indicated that for the majority, acquiring a PhD has provided entry to an academic career (Dolton *et al.* 1990, Rudd 1990, Tarsh 1992, Pearson *et al.* 1993, OST 1997, Elias *et al.* 1997). The last of these, a study of the labour market for social science postgraduates undertaken on behalf of the ESRC in the mid-1990s, reinforced earlier findings that there appeared to be little evidence of specific demand for social science PhDs by employers outside academia.   Non-academic employers interviewed in the course of that study reported that although they had sometimes recruited PhD holders, they had done so on the basis that those selected had been from the general graduate pool, recruited despite, rather than because of their doctorates and - in most cases – with little concern for the subject of their study. Even among independent research institutes - one of the main recruiters of social scientists with research degrees outside the education sector - employers reported a preference for candidates with Masters' degrees rather than PhDs and, like the employers in other industries, frequently expressed low confidence in the skills and adaptability of those who had completed doctoral study, regarding them as likely to be over-specialised, with a narrow range of skills and little awareness of the realities of commercial operations.

However, it was noted that a sizeable minority of job applicants with social science doctorates had both sought and gained such employment and analysis of labour market trends revealed that increasing numbers and proportions of such candidates were being recruited by non-academic employers. Since then, four significant developments have changed the postgraduate labour supply: participation in higher education has continued to grow, both of full and part-time students; postgraduate education has expanded generally, extending the pool of postgraduate-qualified labour market entrants, particularly at Masters' degree level; the numbers of students completing specialist social science research methods degrees has grown substantially; and research skills training within social science doctoral programmes has been progressively transformed by a series of initiatives (ABRC 1982, Winfield 1987, ESRC 2001, Roberts 2002, JFC 2003, QAA 2004) that have changed perspectives and practices related to the provision of postgraduate research training within academia. The latest of these changes have only recently been introduced and it is too early to assess their direct impact on the skills developed on research degree programmes and PhD-holders' employment trajectories, but they are the culmination of trends that had already begun, to ensure that increasingly rigorous research training underpinned research degree scholarship in the social sciences. This raises questions as to how far such research skills are sought by employers beyond academia, how far non-academic employers are aware of changes in the research degree syllabus and how such changes have affected (or are likely to affect) their recruitment of highly-qualified social scientists?

A number of important studies of the labour market for postgraduates have been undertaken in recent years.   As well as our own work (Elias *et al.* 1997 *op. cit*), the research councils commissioned a survey in 1997 of 1987/88 and 1988/89 postgraduates (OST 1997) and the Wellcome Trust investigated the early career trajectories of prize students funded by the trust between 1988 and 1990.   Most recently, the UK Grad Programme and *Graduate Prospects* commissioned an analysis of 1999-2003 PhD graduate HESA first destination statistics (Shinton 2004).   A recent overview of the publicly-available evidence on recent trends in postgraduate education concluded that the number of UK-domiciled graduates embarking on full-time and part-time UK-based doctorates by research across the full disciplinary spectrum had declined between the mid-1990s and the early 2000s (Sastry 2004), but research degree study in social, economic and political studies, business and administrative studies, and education had increased by 11 per cent, 32 per cent and 46 per cent respectively – and predicts that postgraduate education expansion is likely to continue. The overall decline, which mainly reflects decline in

the physical sciences, has been counterbalanced by an increase in the numbers of full-time overseas research students studying in UK higher education institutions during the same period, from both EU and non-EU countries.

The work undertaken for this review builds on previous research and more particularly, on work undertaken on the graduate labour market more broadly. The available data on recent PhD outcomes is, nevertheless, limited. Analysis of existing statistics sources revealed contradictory and often incomplete evidence, deriving on the most part from low response rates which resulted in small cell sizes where more targeted analysis - in our case, of those who had completed social science PhDs - was required. Consequently, much of our analysis of existing sources must be regarded as indicative, but we have assembled a jigsaw of evidence from the available sources which, reassuringly, is consistent with the picture provided by the new research undertaken.

The analyses in Chapter Two utilises data from existing sources: in particular, two longitudinal studies of 1995 and 1999 graduates (Elias *et al.* 1999, Purcell and Elias 2004, Purcell *et al.* 2005), from the samples of which we were able to identify a well-documented minority who had gone on to PhD research programmes. We analyse relevant survey data and in addition, supplement these with data from other available sources.

Existing survey information, while useful in improving our understanding of the dynamics of entry into and exit from PhD research programmes, does not provide detailed information on research degree skills and training. To meet this need, we conducted a new survey of recently qualified PhDs. Chapter Three reports the findings from an online survey of ESRC-funded PhD graduates who had been awarded their doctorates in the period 1998-2002.

Chapter Four presents findings from a programme of telephone interviews conducted with PhD-holders from the 1995 and 1999 cohorts, along with a further sub-sample of the ESRC-funded cohort members who were employed in non-academic jobs. Five per cent of the 1995 respondents had obtained social science undergraduate degrees (60 people) had obtained PhDs and a similar proportion and number of the 1999 cohort respondents went on to do so. From these, our original objective was to select 15 candidates from each cohort who have given us permission to re-contact them: 10 who were employed in non-academic contexts and 5 working in academic posts.

In the case of those employed outside academia, we identified appropriate recruitment decision-makers within organisations. We conducted interviews with these employers, focussing particularly on their perceptions of the value of social science doctorates, the skills requirements of their organisations and the skills acquired in the course of such programmes. Chapter Five summarises the evidence gleaned from these interviews with employers.

Chapter Two

Entry into postgraduate study and subsequent employment – evidence from existing studies

2.1   Introduction

This chapter draws on data from existing sources to provide an overview of the entry into postgraduate study and the subsequent employment experiences of social science PhD holders.

Section 2.2 provides an overview of the movement of recent graduates into postgraduate study and research. The analysis is based on data from two graduate cohort studies. The most recent of these surveyed the early careers of 1999 first degree graduates over a period of 4 years following graduation (Purcell *et al.* 2005). This is supplemented with information from a follow-up study of graduates who gained their first degrees in 1995, for whom we have information covering seven years after graduating with their first degrees (Purcell and Elias 2004[1]). The remaining sections consider the subsequent employment experiences of social science PhDs, focussing on comparisons between those in academic and non-academic employment. Section 2.3 utilises Higher Education Statistics Agency (HESA) data. The 2003/04 survey of the Destinations of Leavers from Higher Education (DLHE) contains questions on the relevance of the qualifications to current employment and assists in gauging the scale of non-academic employment of social science research postgraduates. Section 2.4 presents a reanalysis of data from a survey commissioned by the research councils in 1997, yielding information on the careers of approximately 130 ESRC-funded research postgraduates who gained their PhDs in 1987/88 and 1988/89 (OST 1997). Section 2.5 makes use of information contained within the Labour Force Survey (LFS), a large and nationally representative household-based survey of individuals of the UK labour force, providing some insight into the employment characteristics of people holding a PhD in a social science subject. The final section summarises these findings from earlier studies.

2.2   The movement into postgraduate study

In this section we examine the entry of recent graduates into postgraduate study using information from a study of the early careers of 1999 graduates over a period of four years. This analysis is supplemented with similar information from a seven-year follow-up of 1995 graduates.

Figure 2.1 shows the movement of 1999 graduates into PhD studies. In the year following the completion of their first degree, approximately 2½ per cent of graduates started to study for a PhD, with a slightly higher proportion of men than women undertaking such studies. During the second year following the completion of their 1999 qualification, the proportion of graduates engaged in PhD studies increased to 4 per cent among males and 3 per cent among females. Finally, a further step shift occurred during the third year following graduation, where 4½ percent of males and 3½ percent of females reported that they were studying for a PhD. Beyond 3 years, the proportion of graduates studying for a PhD gradually declined as their PhD studies were completed.

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[1] The short report and working papers for this project can be accessed online via http://www.uwe.ac.uk/bbs/research/esru/7-up.shtml

Figure 2.1   Movement of 1999 graduates into PhD studies by gender
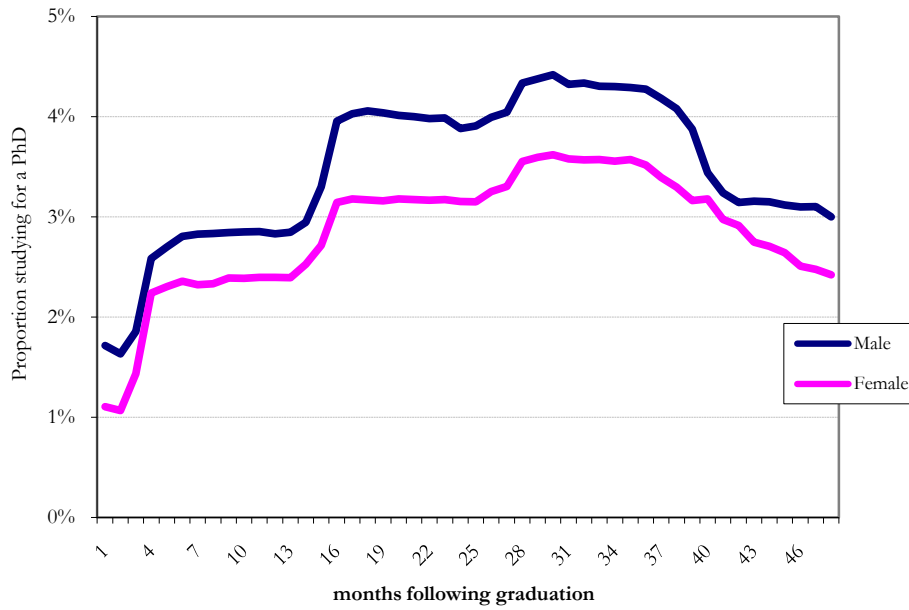
Source: *Class of '99* survey of graduates

Figure 2.2 shows the movement of these graduates into PhD studies by the class of their 1999 degree. There is a clear relationship between degree class and postgraduate study, with the incidence of graduates studying for PhD highest among those who gained a first class honours degree in 1999. During the third year following graduation, participation in PhD studies was approximately 14 per cent among those who graduated with a first class degree in 1999. This rate is approximately 4 times higher than that observed among those with an upper second class degree and 10 times higher than that observed among those with a lower second class degree. The relatively sharp decline in the participation of graduates with first class degrees in postgraduate research beyond 3 years after graduation indicates that such graduates are more likely to enter postgraduate research immediately following the completion of their undergraduate studies.

Figure 2.2   Movement of 1999 graduates into PhD studies by degree class
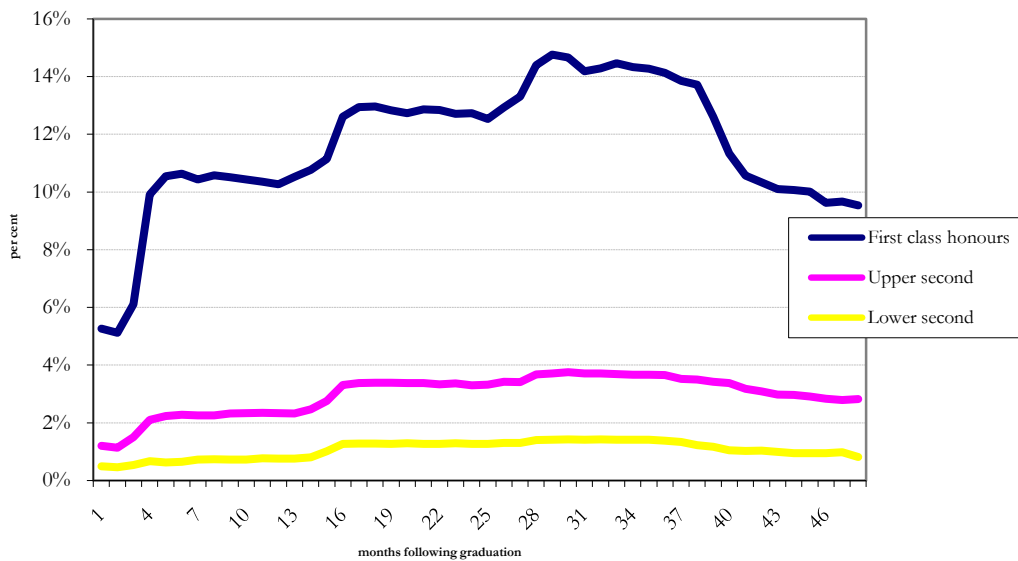
Source: *Class of '99* survey of graduates

Figure 2.3 shows the incidence of 1999 graduates undertaking PhD studies according to subject studied at undergraduate level. Rates of participation in postgraduate research among first degree graduates of education and medicine, arts and humanities and the social sciences are similar. Among such graduates, approximately 1-2 per cent were engaged in postgraduate research during the first twelve months following graduation, increasing to 2-3 per cent during the second and third years following graduation. In contrast, the proportion of science graduates participating in postgraduate research is approximately 6½ per cent during the first year after gaining their first degree, increasing to 8 per cent during the second year following graduation. The relatively sharp decline in the participation of graduates with science degrees in postgraduate research beyond three years after graduation indicates that such graduates are more likely to enter postgraduate research immediately following the completion of their undergraduate studies. It may also be the case that science PhDs are more likely to be completed within the conventional three-year time frame. Graduates from the arts and humanities and the social sciences are relatively less likely to enter postgraduate research immediately after the completion of their undergraduate degree.

Figure 2.3   Movement of 1999 graduates into PhD studies by subject studied
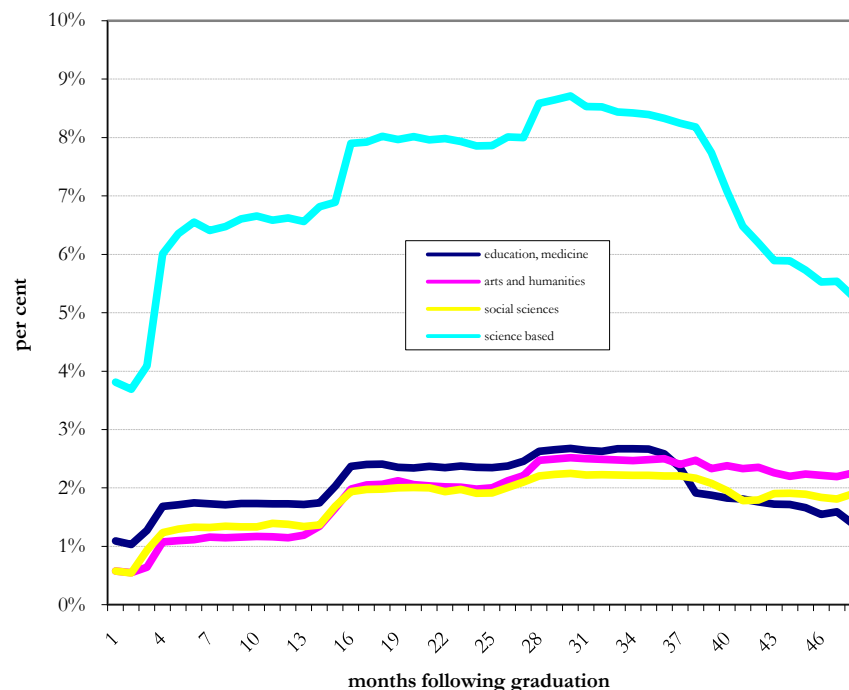
Source: *Class of '99* survey of graduates

To gain a longer perspective on participation in PhD studies we make use of data from the *Seven Years On* study – a longitudinal study of those who gained their first degrees in 1995. Once again, it can be seen in Figure 2.4 that the incidence of graduates undertaking a PhD is higher among those who graduated with a science-based degree during 1995[2]. Figure 2.4 highlights the more protracted entry into a doctoral programme of study displayed by arts and humanities graduates, with participation in PhD research remaining relatively high beyond the period four years after completion of their 1995 qualification.

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[2]   The smaller sample size available from the *Seven Years On* survey (approximately half that which is available from the *Class of '99* survey of graduates) contributes to the greater variability observed in these series compared to those presented in Figure 2.3.

Figure 2.4   Movement of 1995 graduates into PhD studies by subject studied
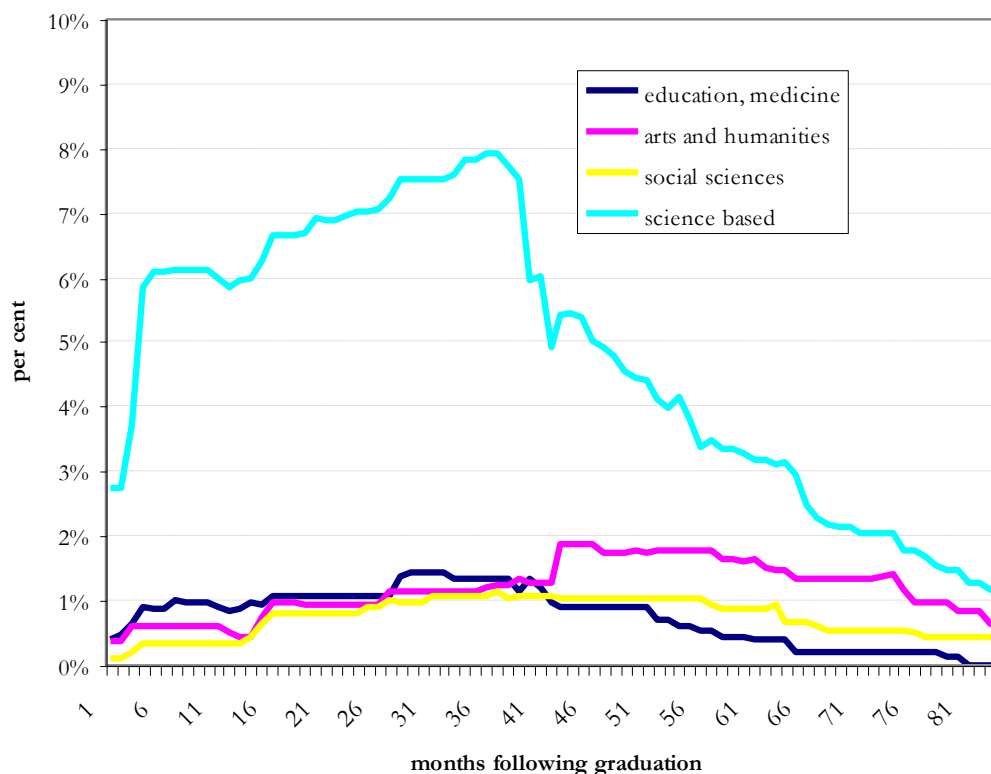
Source: *Seven Years On* survey of 1995 graduates

Respondents to the *Class of '99* survey were asked to give their reasons for undertaking any work-related or career-related courses lasting one month or longer since completing their first degree. Table 2.1 presents the reasons for further study or training given by those who indicated that they had undertaken a PhD since completing their 1999 qualification[3]. Overall, approximately 80 per cent of respondents who undertook a PhD did so to develop more specialist skills and knowledge, while approximately 60 per cent believed that it would improve their career prospects. We must be cautious in interpreting the results for specific subject areas due to the small sample sizes available, but they illustrate similar patterns of response to the findings of more robust analyses later in this report. In particular, it is interesting to note that 90 per cent of social science graduates who undertook a PhD stated that they did so to develop more specialist skills.

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[3]   As well as postgraduate qualifications such as taught Masters', PGCEs and postgraduate diplomas, respondents could also indicate whether they had taken any professional qualifications or short courses. Due to the routing of the questionnaire, we are not able to separate out the reasons given by respondents who had undertaken more than one type of course. Analysis reveals that approximately two thirds of respondents who had started a PhD had not indicated that they had undertaken any other kind of qualification.

Table 2.1:   Reasons for undertaking a PhD

	Education medicine	Arts and humanities	Social sciences	Science based	All
To develop a broader range of skills/knowledge	46%	43%	55%	46%	47%
To develop more specialist skills/knowledge	74%	78%	90%	75%	79%
To change my career options	29%	14%	9%	18%	19%
I thought it would improve my employment prospects	63%	51%	59%	62%	57%
I had a particular career in mind and needed this course	37%	55%	49%	29%	39%
My employer requested/required me to do so	12%	3%	1%	2%	3%
I had been unable to find a suitable job	5%	8%	11%	9%	8%
Sample (N)	43	63	61	188	406

Source: *Class of '99* survey of graduates

The *Class of '99* survey also contained a number of questions that help elicit the attitudes and beliefs of different groups of respondents. Figures 2.5 to 2.8 consider the relative importance of different long-term values reported by graduates with PhDs compared to others. Figure 2.5 reveals that 75 per cent of graduates who did not go on to study for a PhD indicated that high financial rewards were important as far as their long term values are concerned. This compares with just 55 per cent of the 1999 cohort who went on to study for a PhD. Similarly, Figure 2.6 reveals that those graduates from the 1999 cohort who did not go on to study for a PhD also placed greater emphasis upon job security as a long term value. Thirty six percent of such graduates regarded this value as being very important, compared to 25 percent of those graduates from the 1999 cohort who went on to study for a PhD.

Figure 2.7 reveals that graduates from the 1999 cohort who did not go on to study for a PhD placed greater emphasis upon job satisfaction as a long term value. Seventy-six percent of such graduates regarded this value as being very important, compared to 63 percent of those graduates from the 1999 cohort who did not go on to study for a PhD.

Figure 2.5   Long term values: the importance of high financial reward

High financial reward
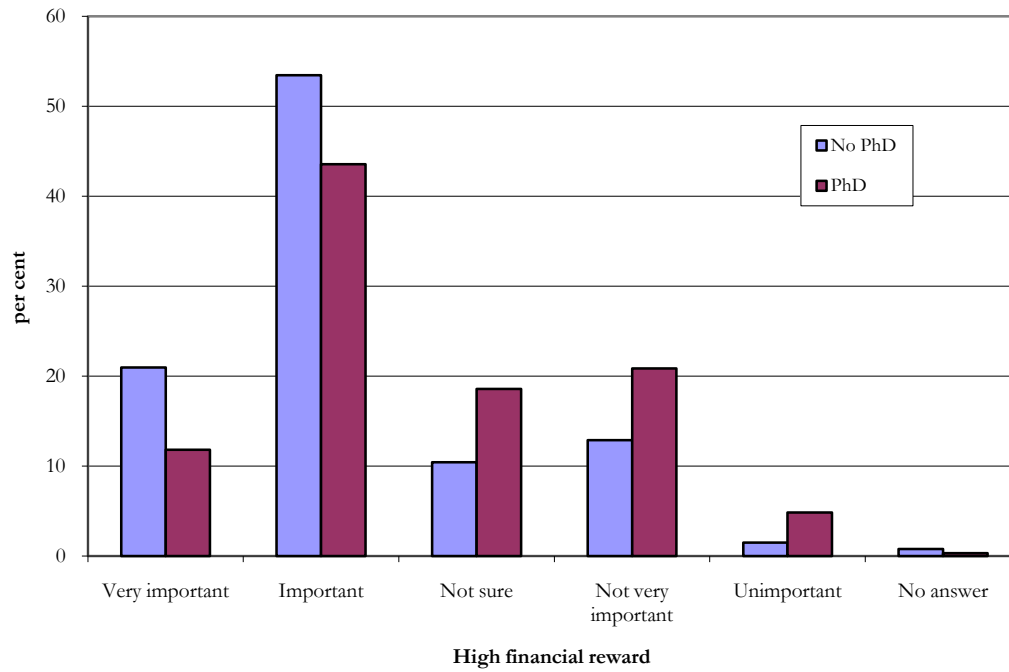
Source: *Class of '99* survey of graduates

Figure 2.6   Long term values: the importance of job security

job security
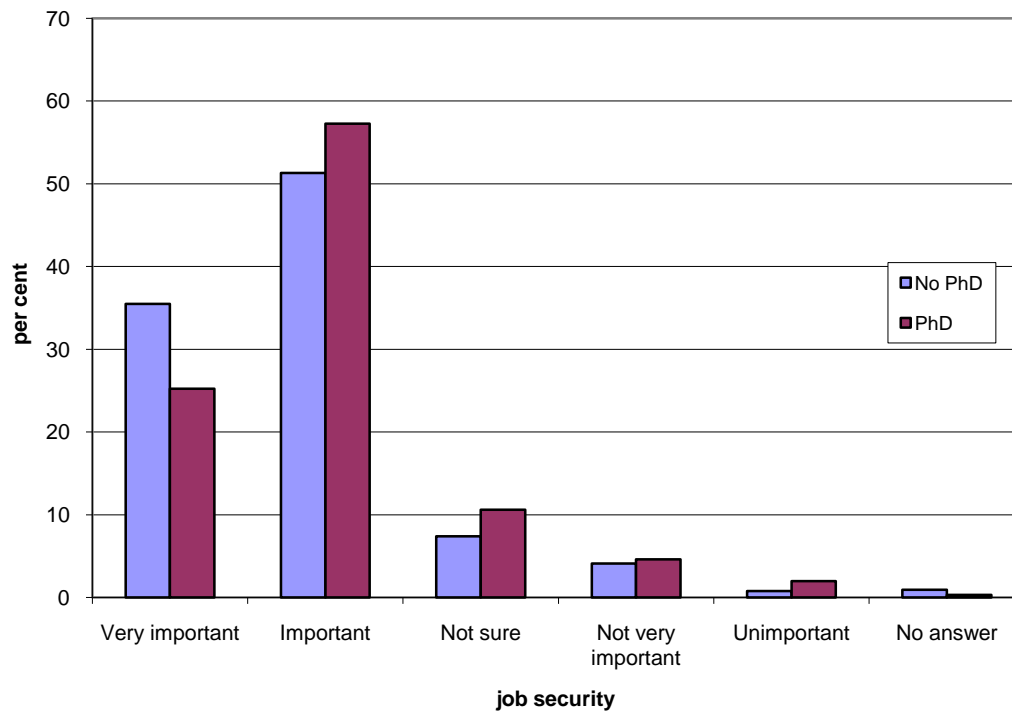
Source: *Class of '99* survey of graduates

Figure 2.7 **Long term values: the importance of job satisfaction/creative/ challenging work**
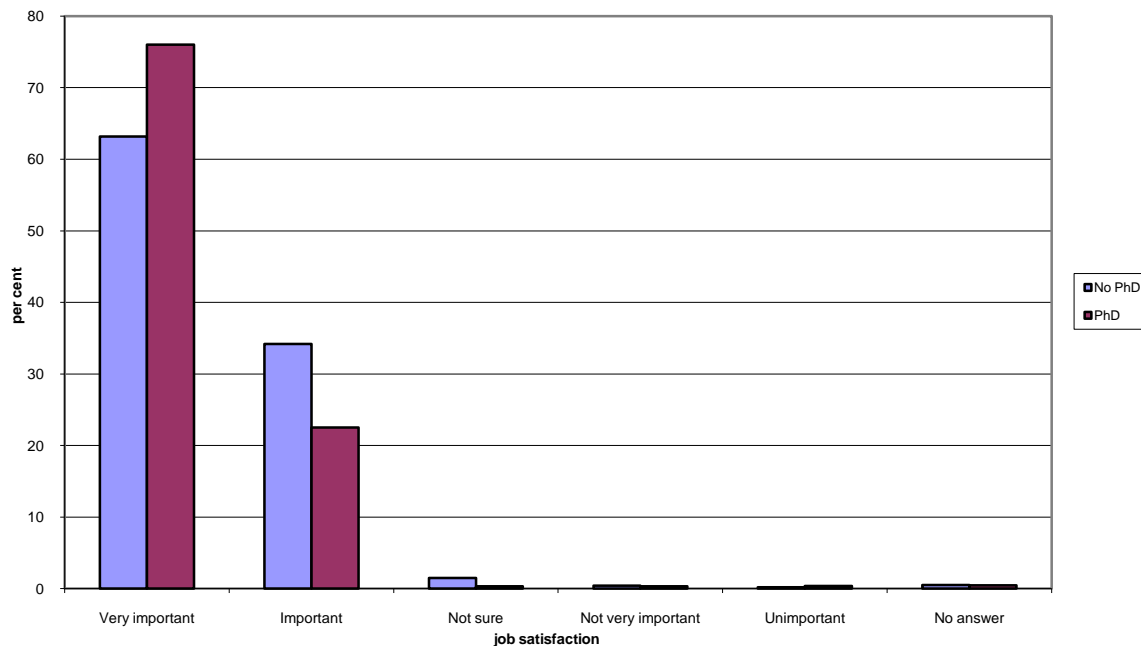
Source: *Class of '99* survey of graduates

2.3 First destinations of PhD graduates

HESA, the Higher Education Statistics Agency, conducts an annual survey of the destinations of leavers from higher education. Information in this section is derived from a subset of such data provided by HESA, namely social science PhD students funded by the ESRC, the EPSRC or the MRC. It is important to state that this is not all social science PhD graduates: only those funded by the Research Councils. Leavers from higher education during the academic year 2002/2003 were sent a questionnaire to find out more about their labour market status on 15th January 2004. Within the sample of respondents there is information on 134 social science PhD holders compared with 771 other PhD holders and 1,530 other former Research Council-funded students[4].

Most of the PhD holders both inside and outside the social sciences were in paid employment (see Table 2.2). Of the social science PhD holders, some 89 per cent reported that they were either in full-time employment, part-time employment or were self-employed. However, while 12 per cent of PhD social science holders worked part-time, the corresponding proportion of PhD holders in other subjects is only 2.5 per cent.

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[4]   The number of ESRC-funded PhD completers recorded in the HESA survey is significantly lower than the number recorded as having submitted their PhD by the ESRC, possibly by as much as 50 per cent. This could be due to a number of factors, notably a low response rate to the HESA survey by this group and differences in the dates to which the HESA survey and the ESRC database refer. It may also be an artefact of the matching procedures used to extract information on research council-funded PhD completers from the HESA survey.

Table 2.2   Employment status by degree and subject

	Social science PhD holders	Other subjects PhD holders	Other degrees
Full-time employment	73.1%	85.9%	53.7%
Part-time employment	11.9%	2.5%	6.9%
Self-employed/freelance	3.7%	1.6%	2.1%
Voluntary / unpaid work	1.4%	0.2%	0.6%
Unemployed / looking for employment	1.5%	3.4%	5.9%
Other (Inactive, further studies)	8.4%	6.4%	30.8%
N (=100%)	134	771	1,530

Source: HESA (subset of information for ex-students funded by ESRC, EPSRC or MRC).

According to the HESA data, about 68 per cent of Research Council-funded social science PhD holders were working in the higher education sector. Employment outside higher education included central, regional and local government administration, private research institutions and business and management consultancy activities.   Other destinations ranged over the manufacturing sector, utilities and telecommunications, security broking and fund management, engineering design consultancy, surveying activities, public security, primary and adult education, health and social work, human health and hospital activities, social work, activities of membership and international organisations, artistic and literary creation and interpretation and other miscellaneous business activities.

Most of the social science PhD holders were working in occupations usually found in an academic environment, such as lecturers, professors or researchers. Other occupations reported referred to the subject studied for, such as psychologists, town planners or economists. Most of the non-academic occupations consisted of administrative and managerial jobs (such as ICT manager, natural environment, conservation and heritage managers, computer analysts and programmers, book publisher or administrative professionals); others worked as teachers in primary or secondary schools or special needs institutions.

Over a quarter of the social science PhD holders had worked for their current employer before; a higher proportion than that of PhD holders of other subjects (16 per cent). More than one in five social science PhD holders had previously worked for their current employer both before and during their programme of study. This result varied between social science PhD holders inside and outside academia, with more than twice as many of those employed in academia having previously worked for their employer than was the case for those outside academia – a clear illustration of the established pattern of short-term contracts and part-time work as part of the 'academic apprenticeship', as will be discussed later in this report.

Aspects of a degree

Graduates were asked about the requirement for a degree in order to obtain their current job ("Would you have been able to get the job without the qualification you have recently obtained?") and which aspect of the degree was important to the employer ("As far as you are aware, what was more important to your employer about your qualification, the subject(s) you studied or the level of study?").

The number of social scientists in the sample is small (99) so that comparison of the outcomes of the 70 per cent who had obtained employment in higher education and the minority who did not can at best be indicative, but it is not surprising that those in academic jobs were significantly more likely to have reported that their PhD had been required or had been an advantage in obtaining their job than was the case for those in non-academic jobs. Over three-quarters of the former claimed that they could not have obtained their current job without having a PhD and all but one of the remainder said that having a PhD had been an advantage. Virtually all of them reported that both the level of study and subject of their qualifications had been equally important. Conversely, although over a quarter of those in non-academic employment said that their PhD had been required or expected of applicants for their current job, a similar proportion reported that they could have obtained the job without it, although the largest proportion felt that it had been an advantage. Interestingly, although level of study was perceived to have been less important in obtaining their current jobs, the majority considered that their subject of study had been important: something that research on earlier cohorts of PhD graduates had *not* revealed.

There is little evidence of disaffection. About 80 per cent of social scientists employed both inside and outside academia indicated that their current job was exactly the type of job they wanted to do (Figure 2.8): an extraordinarily high 'success rate' in achieving desired outcomes. Jobs outside academia had also been taken to broaden experience, because of the opportunity to progress or because they were the best or only job offer.

Figure 2.8   Reason for taking up the job*

*Multiple choice question
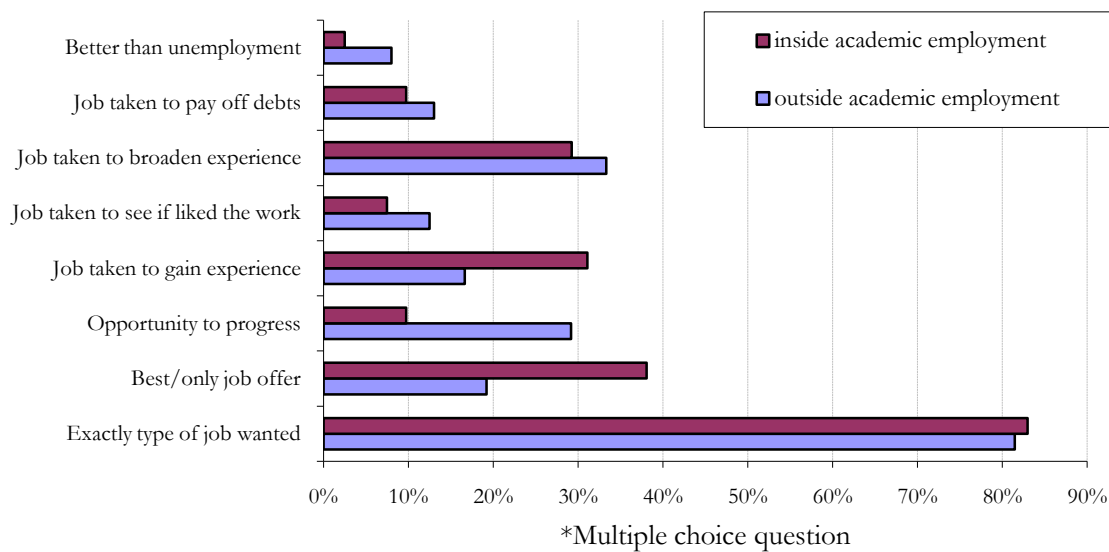
As Table 2.3 shows, personal contacts played the most important role in job-finding both inside and outside academia, followed by newspaper advertisements. Recruitment agency/website methods were more relevant in the academic sector, which is likely to reflect specialist 'academic network' websites, which have been increasing in significance over the last few years.

Table 2.3   **Main methods used to find job by employment sector**

	Social science PhD employed…	
	…outside academia	… in higher education
Personal contacts, including family and friends, networking	39.0%	31.2%
Newspaper/magazine advertisement	12.2%	16.9%
Employers web site	9.8%	9.1%
Recruitment agency/website	2.4%	11.7%

2.4   Employment inside and outside academia – the 1997 survey of postgraduates

In 1997 the Research Councils commissioned a survey of former postgraduates who were funded by the Research Councils and whose funding ended in the academic years 1987/88 and 1988/89. The aim of this survey was to supplement data on first employment destinations of students and to identify the benefits of postgraduate study over the longer term. These survey data have been reanalysed to extract further detail regarding those who gained PhDs in the social sciences. This is consequently the most directly-comparable data we were able to access, but the small numbers of social science PhD-holders included does not allow for robust analysis, because the survey included only 58 social science PhD students, mainly funded by the ESRC/SSRC or the SERC/SRC. It nevertheless seemed to us to be worth exploring the data because it provides some indication of the employment situation of PhD social science holders at a later stage in their careers than reported in the HESA survey data. Consequently, discussion of the date from this source is brief and is provided largely because the findings reflect such similar patterns and outcomes to those of the other surveys discussed in the report.

The employment status of these former PhD students at the time of the survey, some 9-10 years after gaining their PhDs, is shown in Table 2.4. The proportion of social science research students in paid employment was higher than for the aggregated doctorates from other disciplinary areas, or of other former postgraduate students. None of the PhD social scientists had reported that they were unemployed at the time of the survey.

Table 2.4   **Current employment status of funded social science research students**

	Social science PhDs	Doctorates in other subject	Other postgraduate students
In paid employment	96.9%	93.4%	89.8%
Unemployment		1.4%	2.1%
Full-time education		0.3%	2.5%
Looking after home/family	1.5%	3.3%	3.3%
Other (incl. sickness, traveling)	1.5%	1.6%	2.4 %
	100 0%	100 0%	100 0%

Source: OST (1997)

First and current jobs

The majority of these social science PhD-holders were in academic employment at the survey dates (Figure 2.9). Less than 20 per cent had only experienced employment in a non-academic environment. These were either still in their first non-academic job or had worked there both in their first job after postgraduate study and in their job at the time of the survey ('always non-academic'). For another 8 per cent, their first job after completing their PhD had been academic, but they were employed outside the higher education environment at the time of the survey. More than half of the sample had gained some experience in a job outside academia.

Figure 2.9   **First and current job of postgraduates inside and outside academia**
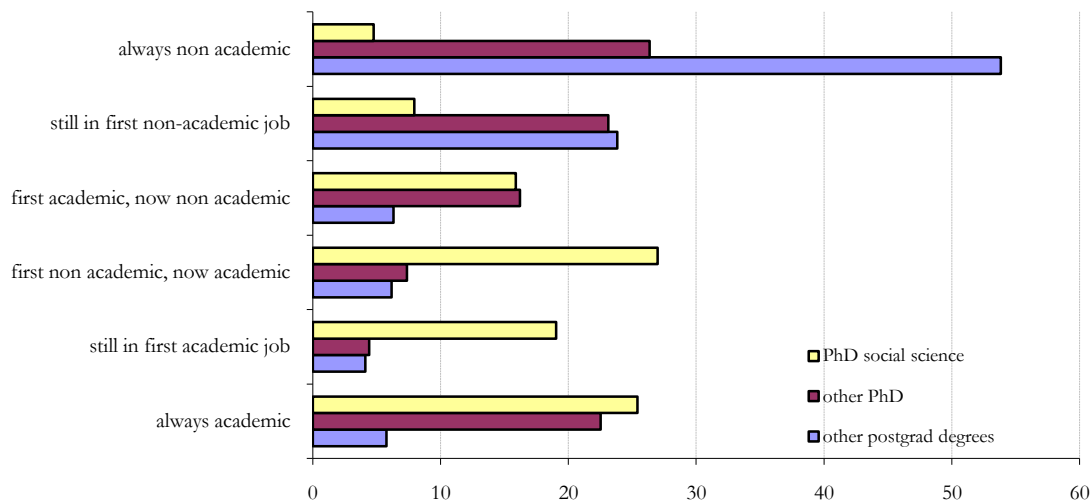
Source: OST (1997)

Nearly all of the experiences of employment outside an academic environment had been as full-time employees. Those in non-academic jobs were more likely than those in academic jobs to have had an open-ended rather than fixed term contract, both in their first job after completion of their PhD and at the time of the survey. PhD social scientists currently employed outside academia were more likely to have been responsible for supervision of other employees than those with academic jobs and the financial returns to non-academic employment were significantly higher than for academic employment. The annual salary for the first job in academia ranged from £2,000 to £24,000, with an average of approximately £11,700. The income of the current job outside academia ranged from £9,000 (operations research manager) to £55,000 (self-employed economist), with an average of around £24,000.

The professions in which social science doctorates outside academia were working at the time of the survey were in business, commerce and marketing; as civil engineers, anthropologists, economists, psychologists or other social scientists. A relatively high proportion were employed within higher, further or other education and teaching. About half of the PhD social scientists working outside academia were still involved in teaching, lecturing and research.

There were clear instances of under-employment or 'radical change' first destinations among this sample, such as the PhD-holders working as an artist, as a nurse and in a construction trade, but most of first jobs had involved skills related to the social science subjects studied, in occupations such as accountants, anthropologists, sociologists, psychologists and statisticians.

The majority of social scientists with a PhD took their first or their current job because it was the kind of work or career that they had wanted. About half of respondents said that the work they

did in their first job was related to the subject they had studied for. This proportion rises to two thirds when asked this same question about their current job.

About a quarter of respondents said that some kind of post-graduate qualification was necessary for their first job, whereas this had risen substantially (though still less than half) with reference to current jobs. A fifth reported that the PhD had made no difference to getting either their first or their current job and around a third said that the subject content of the PhD had made no difference either to obtaining or carrying out their current job. This proportion is slightly higher than when asked about the first job: presumably because experience rather than credentials became progressively more important as they moved up career ladders or changed jobs.

Views and experiences of postgraduate study

The evidence from this survey, with the proviso that it is again limited by small numbers, echoes the findings other survey data considered in the course of this investigation. The majority of social science PhDs working in an academic job (89 per cent) said that their PhD training had equipped them for their employment, compared with two-thirds of those working in non-academic jobs at the time of the survey. About two-thirds of social science PhD-holders working outside academia stated that their PhD had been very important in their experience of applying for jobs, compared to all but one of those working at University stating that it was very important for their employers that they hold a PhD.

Figure 2.10 illustrates the perceived differences in the benefits of postgraduate studies between social science PhD-holders with experience in non academic employment, social science PhD-holders who have only worked inside academia and other former postgraduate students. The benefit of getting promoted and getting an interesting job as a result of the PhD was highest for those with social science doctorates working inside academia. Social science PhD-holders with non-academic experience regarded the highest benefit from the degree studies had been enabling them to become a more widely educated person. This reinforces findings of the first section in which PhD graduates emphasised intrinsic rather than extrinsic or instrumental values.

Figure 2.10   Benefits of postgraduate study by subject and employer
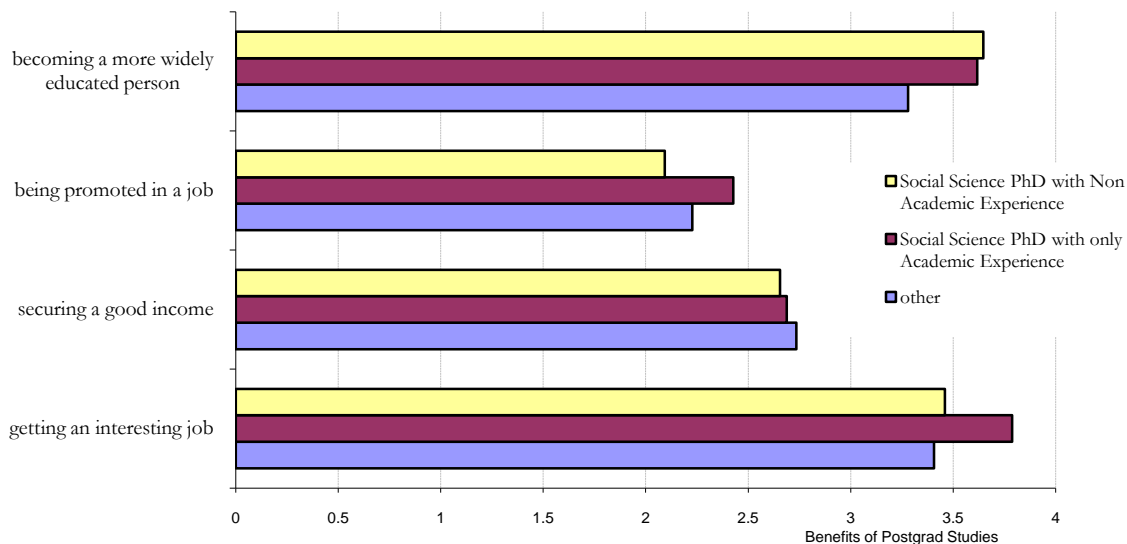
Source: OST (1997)

Social science PhD holders working outside academia were generally very content with their education. Only about 3 per cent stated that they would not opt for postgraduate study if making the decision again.

2.5   The characteristics of social science PhDs

In this section we make use of the Labour Force Survey (LFS) to gain further knowledge about the employment of social science PhD-holders in the UK workforce. An attempt to provide a detailed overview of the employment of social science PhD-holders in any single quarter of LFS data would not contain a sufficient number of sample observations to yield robust population estimates of their characteristics. To put this into perspective, the standard LFS 'publication threshold' based upon a single quarter of LFS data is defined as grossed up estimates of 10,000 or more from an achieved sample of 30 or more. In order to provide meaningful sample sizes, data from successive quarters of the LFS have been merged. Because the same individual appears in five consecutive surveys the following waves were selected to avoid double-counting. Starting from the last available quarter, March to May 2004, the five succeeding quarterly data sets that were chosen are December 2002 to February 2003, September to November 2001, June to August 2000, March to May 1999 and December 1996 to February 1997. Grossing factors have then been applied to the data to produce population estimates of the employment of Social Science PhDs.

Social science as defined in the LFS covers the following subjects: economics, sociology, social and economic policy, residential social work, social anthropology, psychology (without significant biological element), applied geography, politics, law and other social studies. In addition to this, business studies are often referred to as being a part of social science (Elias *et al.* 1997). Business and financial studies are defined as business and management studies, operations studies, banking, accountancy, marketing and market research, industrial relations and trade union studies.

The number of people with a PhD in a social science subject has remained relatively constant over the period 1996 – 2004. The same goes for doctoral degrees in all subjects. However, there has been an overall increase in the number of people with higher degrees. LFS estimates indicate that there are approximately 17,300 social science PhD-holders. In addition to this, there are approximately 3,200 people with a business studies PhD and 215,300 with a PhD in another subject. Of all PhDs, 7.3 per cent are taken within a social science subject and 1.4 per cent within a business and financial studies subject.

Table 2.5 displays the characteristics of both social science PhD and other PhD-holders, showing that social science PhD-holders were more often female than male and less likely to be British than other PhD graduates. 23 per cent reported having a health problem lasting more than a year; a strange finding that is significantly higher than for other PhD-holders. Similar patterns were found in the recent analysis of HESA PhD first destination data as a whole (Shinton 2004). In all other respects, their profile was similar to that of other PhD-holders. Apart from one, the majority of all social science PhD-holders worked in an academic environment.

Table 2.5   Characteristics of PhD holders in the UK

	Social science PhDs (inc. business studies)	Other PhDs
Gender (% male)	66.6%	74.2%
Age (average in years)	45	44
Ethnicity and national origin		
White	90.4%	90.1%
British Nationality	80.8%	89.4%
Health problem lasting more than a year	23.0%	18.9%
Current Activity		
Employed	92.2%	91.5%
Of which academic	52.3%	28.9%
Unemployed	1.4%	1.7%
Inactive	6.4%	6.8%
Population	20,497	215,287
Sample Size	275	2,907

Source: Pooled LFS (Quarterly Waves, Dec 96 – Feb 97, Mar 99 – May 99, June 00 – Aug 00, Sept 01 – Nov 01, Dec 02 – Feb 03, Mar 04 – May 04), weighted.

Figure 2.11 shows the sectoral employment of social science PhD-holders working in non-academic jobs. The research and development (including other business activities) section represented the majority (33 per cent) of non-academic employments followed by public administration and defence (20 per cent). Other main sectors of employment for social science PhD-holders appear to be health and social work, manufacturing, and education (primary education, general secondary education, adult, other education).

Figure 2.11   Sectoral distribution of employment of social science PhD holders in non-academic employment
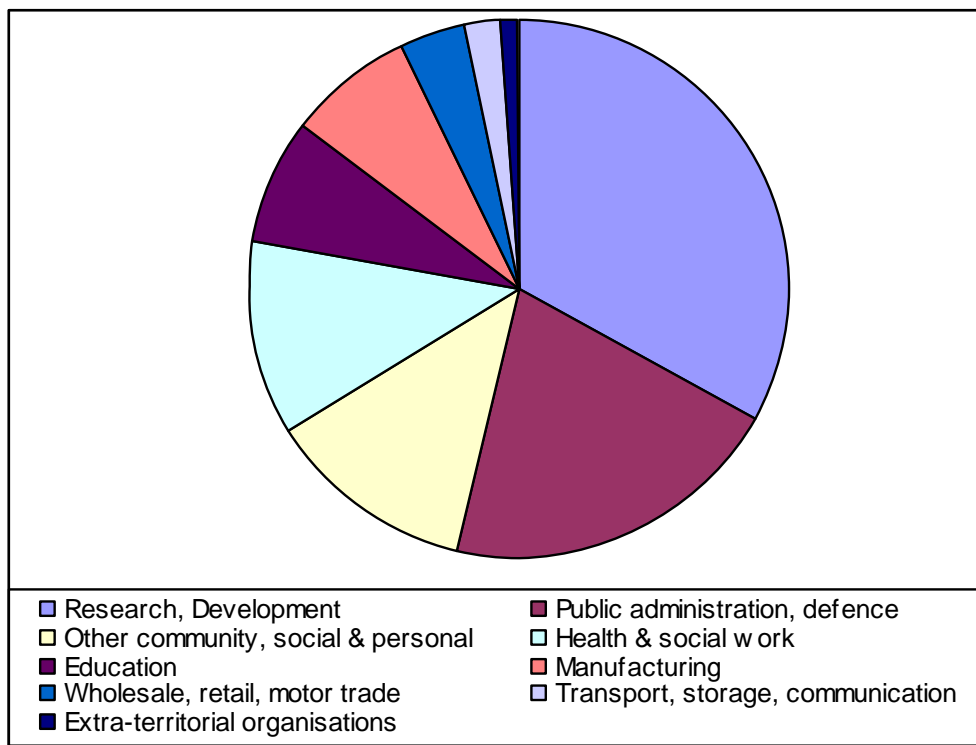
Source: Pooled LFS (Quarterly Waves, Dec 96 – Feb 97, Mar 99 – May 99, June 00 – Aug 00, Sept 01 – Nov 01, Dec 02 – Feb 03, Mar 04 – May 04), weighted.

Table 2.6 concentrates on those in employment and shows differences in the employment characteristics of PhD-holders, distinguishing those working in academia from those outside. This closer look allows for analysis of differences between PhD-holders working in and outside academia both in social science and other subjects. The information given in Table 2.6 differs from that in Table 2.5 in that it is limited to employees rather than looking at the whole population.

Table 2.6:   Characteristics of PhD holders inside and outside academia

| | PhD Social Science (incl. Business Studies) | | PhD Other subject | |
| | Employed by | | Employed by | |
	Non Academic Employer	Academic Employer	Non Academic Employer	Academic Employer
Male (%)	67.7	68.2	75.6	73.1
White (%)	88.8	92.4	90.0	91.0
British nationality (%)	78.5	84.5	90.6	86.9
Average age (years)	44.6	45.3	43.2	44.0
Population	8,167 (= 43.2 %)	10,726 (= 56.8 %)	134,835 (= 68.4 %)	62,254 (= 31.6 %)
Sample size	108	146	1,810	845

Source: Pooled LFS (Quarterly Waves, Dec 96 – Feb 97, Mar 99 – May 99, June 00 – Aug 00, Sept 01 – Nov 01, Dec 02 – Feb 03, Mar 04 – May 04), weighted.

2.6   Summary – The routes taken by social science graduates into PhD studies and beyond

The findings in this chapter identify the routes taken by graduates into postgraduate studies (PhD) and subsequent employment. The following findings are highlighted:

- Differences were found in the rate at which graduates entered postgraduate study according to grades and subject. Graduates with first class honours degrees had a greater propensity to continue to postgraduate studies and were more likely to do so directly or soon after completing their first degree. Participation in postgraduate research among graduates of education, medicine, arts and humanities, and social science was relatively uniform. The highest participation in postgraduate research was among those who had completed science-based first degrees.

- The reasons given for continuing HE studies in social sciences were predominantly to develop more specialist skills. Differences in long-term values such as the importance to them of financial rewards, job security, job satisfaction and the doing socially-useful work were found between graduates with and without a PhD. PhD graduates placed less emphasis on long term values that relate to extrinsic conditions of employment. Greater emphasis was placed upon the intrinsic character of work.

- In the UK labour force, we estimated that there were approximately 20,500 PhD-holders with doctorates in either a social science or a business study subject. The majority of social scientists with a PhD work within the HE sector. Nevertheless, more than 40 per cent worked outside the higher education sector. Significant employment by social science PhD-holders was identified in non-academic research and development

(including other business activities), public administration and defence, health and social work, manufacturing and education (mainly secondary and FE).

- The majority of social science PhD-holders in the survey samples analysed had gained some employment experience outside the academic environment at some stage after obtaining their PhD, whether or not they were currently employed inside or outside academia.

- The findings suggest that those in non-academic employment as well as those in academia were satisfied with the extent to which their postgraduate training had equipped them for employment, with only 3 per cent saying that with hindsight they would not undertake postgraduate study.

- More than four-fifths of both social science PhD holders working in academia and in non-academic employment revealed that their current job was exactly the type of job they   wanted.

Chapter Three

The skills and jobs held by ESRC-funded PhD holders in academic and non-academic employment

3.1   Introduction

The preceding chapter gave some insights into the characteristics of social science PhD-holders and the likely career paths followed after gaining their doctoral degrees. Whilst academic employment is the most common route for such highly qualified people, non-academic employment was pursued by a significant minority – and not necessarily as a second-best alternative. In terms of the occupations they held, it seems clear that most are in non-academic jobs which can make use of their specialist skills, knowledge and research training. Yet it is not clear how the training and skills they acquired during their PhD studies facilitated the choice of a non-academic career, nor can we claim that the match between skills demanded in non-academic jobs and the skills they brought to these jobs can be determined simply by examining the types of jobs they hold. In this chapter we pursue these issues in a more direct fashion, making use of a special survey of ESRC-funded PhD-holders who gained their degrees between 1998 and 2002. We examine the nature of this sample of PhD-holders in terms of the jobs they held, their views on the extent to which various skills were developed on their degree programmes and whether or not these were used in their current jobs.

3.2   The survey of 1998-2002 PhD completers

The purpose of the survey was to provide information on the nature of the employment of PhD holders, particularly those who had entered and retained a non-academic job after gaining their PhD. Given the lack of any centralised address data base for such alumni, sampling and survey procedures were developed which, it was hoped, would generate a sufficiently large sample to facilitate statistical generalisation to the population of social science PhDs.

The first stage of sampling was to identify the population to be surveyed. The ESRC provided tabulated statistical information which indicated the number of completers by the year in which their PhD was completed, their university and department. This information covered 1,726 people who had completed their PhD between 1998 and 2002[5] from 73 UK HEIs. Because of restrictions relating to Data Protection, we were unable to contact these alumni direct. Contact was made via the department responsible for supervising their PhD. 1,235 possible respondents were identified in 250 departments from a selected 28 institutions. These institutions were chosen in terms of their coverage of the population of PhD completers (the 'top 20' higher education institutions accounted for approximately two-thirds of all 1998-2002 ESRC-funded PhD completers), together with a sample of institutions which had only a small number of PhD completers. Contacting this sample proved considerably more difficult and time-consuming than anticipated, but via various means (phone calls to supervisors, requests to alumni offices and web search[6]) we were able to obtain email addresses for 740 PhD completers. These individuals were invited to complete a web-based questionnaire. Of those contacted, 211 responded (28 per cent response rate). Of these, 14 respondents indicated that they gained their PhD outside the range of dates for this study or failed to indicate a date and 2 did not hold a job at the time of the survey. These 16 cases were removed form the sample, yielding 195 cases for analysis.

In terms of the spread of institutions at which they studied, the sample is representative of the skewed nature of this population. Eight institutions[7] account for more than half this sample and five institutions provided only one respondent each.

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[5]   Of these, 375 submitted their theses in calendar year 1998, 356 in 1999, 334 in 2000, 376 in 2001 and 285 in 2002.
[6]   Full details of the contact procedures are given at Appendix One.
[7]   These are Oxford, Lancaster, Sussex, Sheffield, Birmingham, Manchester, Bristol and Glasgow.

3.3 The characteristics of the sample

Table 3.1 shows the structure of the achieved sample by gender and year. The final column shows the distribution of completion dates for the full population of ESRC-funded social science postgraduates as supplied by the ESRC. From comparison of the two right-hand columns it can be seen that the achieved sample under-represents those who completed their PhDs in the early part of this period, particularly 1998 and 1999.

Table 3.1   Structure of sample of PhD holders by year completed PhD and gender

		Male	Female	Total		ESRC-funded PhD completers
				Count	%	%
	1998	8	2	10	5	22
Year	1999	14	13	27	14	21
PhD	2000	18	26	44	23	19
awarded	2001	33	24	57	29	22
	2002	29	28	57	29	17
Total number of respondents		102	93	195	100	100

Sources: Survey of the careers of social science PhDs/ Tabulations provided by ESRC

In the following analysis we distinguish between those PhD-holders who are working in the academic sector (employed in a higher education institution) and those who are employed in the non-academic sector. We showed in Chapter Two that the proportion of social science PhD-holders not employed in the academic sector varied between 28 per cent and 43 per cent, depending upon the nature of this information and the date to which it refers. The recent HESA survey recorded 32 per cent in non-academic employment, the 1997 survey recorded 28 per cent and the Labour Force Survey showed 43 per cent of social science PhDs in non-academic employment[8]. Table 3.2 shows the employment situation of the 195 survey respondents at the time they completed the survey (between October 2004 and April 2005). In terms of their employers, 26 per cent of the sample was in non-academic employment. This is slightly lower than the proportion recorded in earlier surveys, reflecting the fact that contact procedures, particularly the use of email addresses, departmental methods of contact and a web-survey, probably biased the response towards those in academic employment.

Table 3.2   Current employment situation by type of employer

Current situation	% in non-academic employment	% in academic employment
In full time employment related to my long-term career plans	72.5	91.7
In part time employment related to my long-term career plans	5.9	4.2
In full time employment (other)	13.7	2.8
In part time employment (other)	0	1.4
Self-employed	7.8	0
Total (N)	51	144

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[8]   The higher figure from the LFS probably reflects the fact that this source covers social science PhDs of all ages. It is likely that a significant number of PhD holders move from academic to non-academic employment as their careers develop, whereas movement from non academic to academic employment is probably less common.

3.4 Reasons for undertaking a social science PhD

Figure 3.1 shows the main reasons that respondents gave for studying for a PhD, differentiating between those who were in academic employment and those who were in non-academic employment. As can be seen, the majority of those in academic employment stated that it was because the wanted to pursue an academic career. For those in non-academic employment, nearly 70 per cent stated that the main reason was because they wanted to pursue an in-depth study of a particular topic. Additionally, almost 50 per cent of this group stated that they undertook a PhD because they thought it would improve their career prospects generally.

Figure 3.1   Reasons for studying for a PhD by type of employer
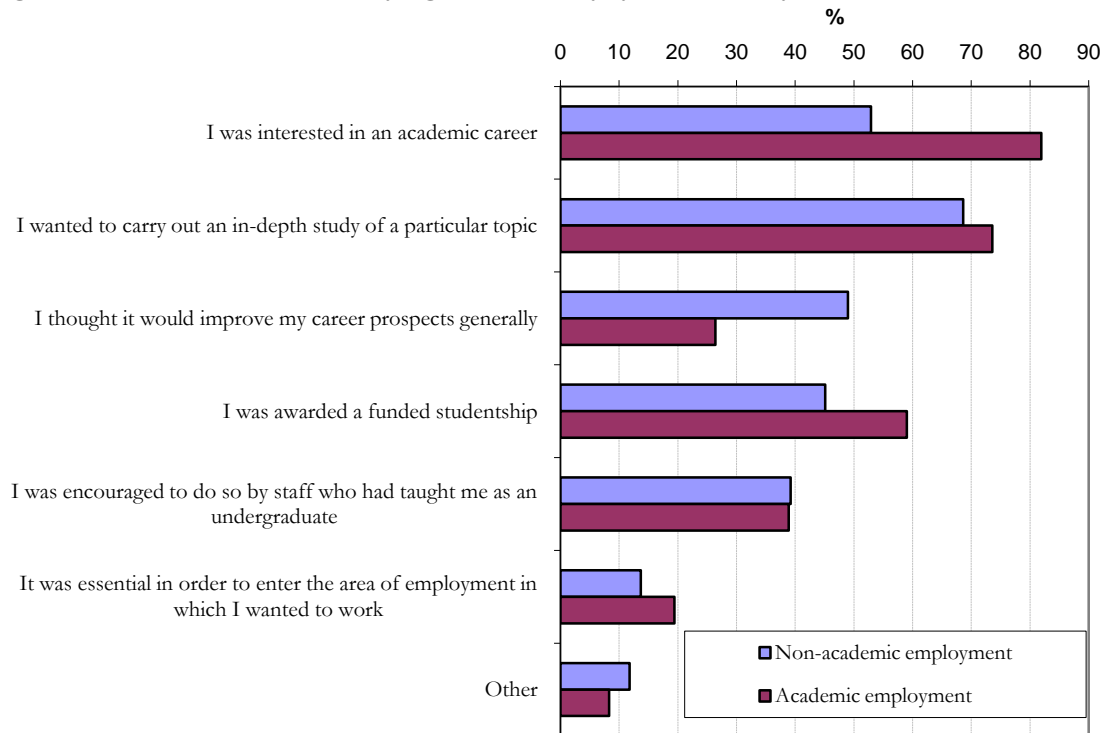
Source: Survey of 1998-2000 ESRC-funded PhDs

3.5 Academic versus non-academic employers of social science PhDs

As was shown in Chapter Two, non-academic employers tend on the whole to be smaller organisations than the higher education institutions. This reflects the fact that they may be specialist organisations (e.g. consultancy firms or organisations providing technical services). Confirmation of this fact is shown in Figure 3.2, which indicates that less than 40 per cent of the organisations at which respondents in the non-academic sectors were working had more than 1,000 employees, compared with three-quarters of the higher education institutions employing social science PhD holders. Conversely, a quarter of the non-academic employers of social science PhDs were reported as having fewer than 25 employees.

Figure 3.2   Size of current organisation by type of employer
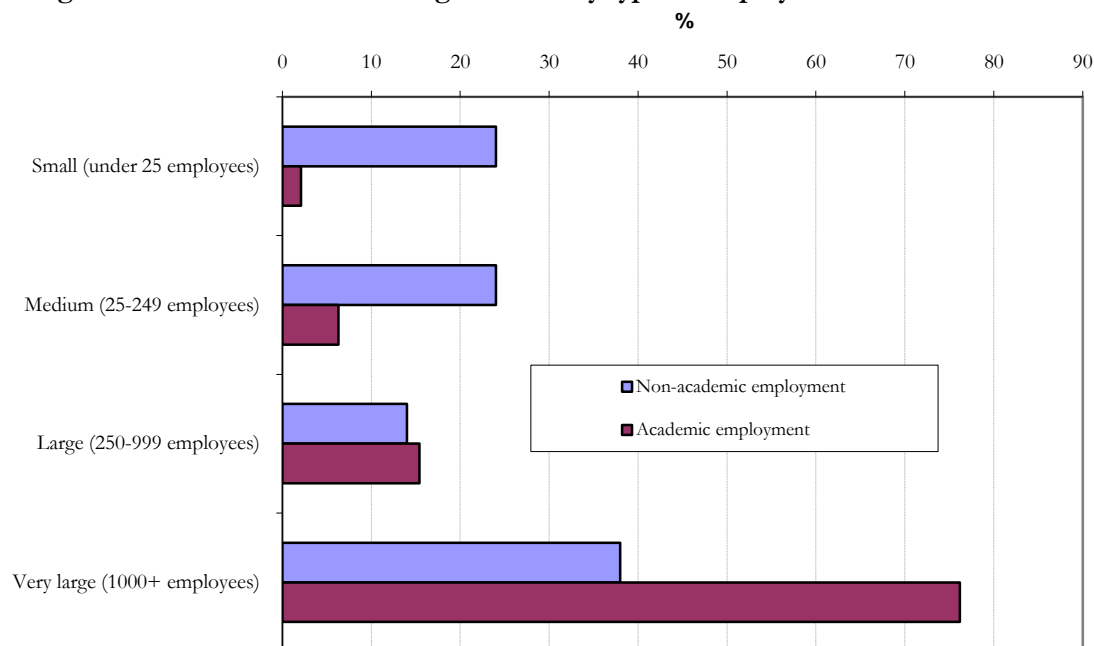
Source: Survey of 1998-2000 ESRC-funded PhDs

We were interested in finding out the reasons why certain social science PhD holders chose academic careers compared with the reasons given by those who had followed the non-academic route. Figure 3.1 shows a link between the choice of a PhD and the subsequent career, but it may be the case that those who entered non-academic employment did so having failed to gain an academic post after qualifying. To explore this further, we provided respondents with a list of reasons for taking their current job, allowing them to choose all reasons that applied. The responses are shown in Table 3.3 again distinguishing between those in academic and non-academic employment. Some significant differences are revealed between the responses provide by these two groups. Firstly, those in academic employment were more likely to respond that they had previously worked for this employer. This probably reflects the fact that those who wanted to enter an academic job after qualifying were more likely to have sought and to have been offered academic employment whilst studying for their PhD. Secondly, the salaries and other conditions of employment constituted a more important set of reasons for those in non-academic employment than for those in academic jobs. Finally, a higher proportion of PhD-holders in non-academic jobs gave better job security as a reason for choosing their job.

Respondents were asked how important their PhD had been in terms of them getting the job they held at the time of the survey. Not surprisingly, a high proportion of those in academic jobs stated that their PhD had been essential in terms of them obtaining their job (81 per cent compared with 24 per cent of those in non-academic jobs). For those who held non-academic jobs, the majority regarded their PhD as giving them an advantage (63 per cent) while 14 per cent stated that their PhD had not been a significant factor in terms of obtaining their jobs.

Table 3.3   Reasons for taking current job by type of employer

Reasons given for taking current job	Non-academic employment	Academic employment
It was exactly the type of work I wanted	62.7	70.8
I wanted to work for this employer	45.1	38.2
I was already working/had previously worked for this employer	15.7	29.9
The salary level was attractive	51.0	17.4
Other conditions of employment were attractive	39.2	27.8
I wanted to work in this locality/region	41.2	50.7
It offered interesting work	68.6	66
It offered the chance for me to use the skills I had acquired during my PhD studies	56.9	75.7
It offered the chance to learn new skills	56.9	38.2
I thought it would lead to opportunities for promotion/career development	62.7	57.6
To gain experience in order to obtain the type of job I really wanted	9.8	15.3
It offered job security	33.3	25.7
I need to earn money and this was the best/only available option	13.7	14.6
It offered a good work/life balance	25.5	29.9
Other	5.9	4.2

Source: Survey of 1998-2000 ESRC-funded PhDs

There are significant differences in the salaries earned by the two groups of employees. Figure 3.3 shows the distribution of gross annual earnings for academic versus non-academic social science PhD holders. For those in academic jobs, the modal earnings band is £27,000 to £29,999. For non-academic employees, salaries are, on average, much higher. The modal band for this group is £36,000 to £39,999, with many respondents reporting earnings of £60,000 a year or more.

The different contractual employment position of academic as opposed to non-academic employees is illustrated in Figure 3.4. It must be borne in mind that, on average, five years have elapsed between the date upon which the respondents gained their PhDs and the time that they completed the survey. For most in academic jobs, entry into an academic career will have been at the time they gained their PhD, or earlier (see Table 3.3). Yet almost half of these academic employees reported that they were on fixed term contracts. For those in non-academic jobs, the fact that three quarters have a permanent or open-ended employment contract clarifies the nature of the response shown in Table 3.3.

Figure 3.3   Gross annual earnings of social science PhDs in full time jobs by type of employer
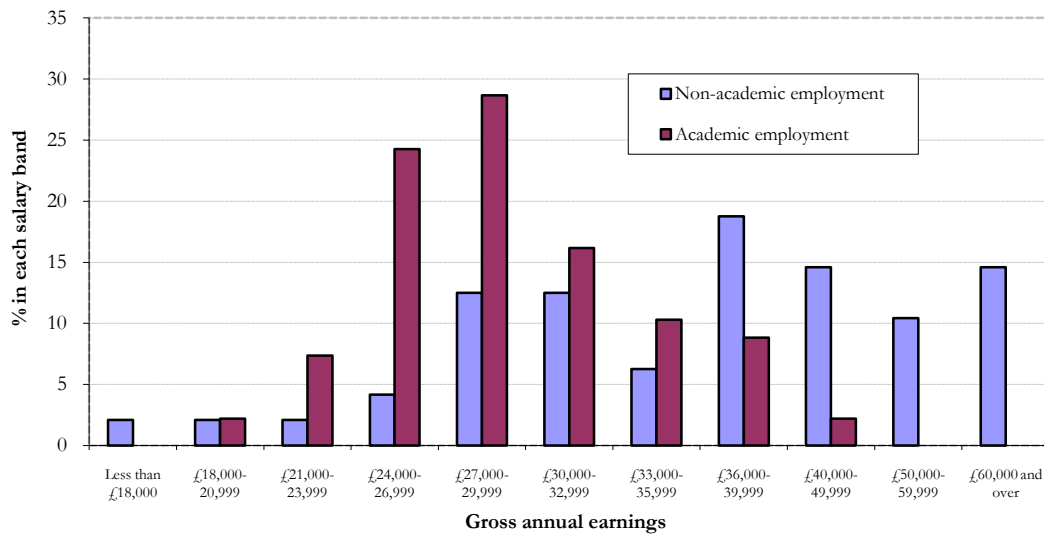
Source: Survey of 1998-2000 ESRC-funded PhDs

Figure 3.4   Contractual basis of current job by type of employer
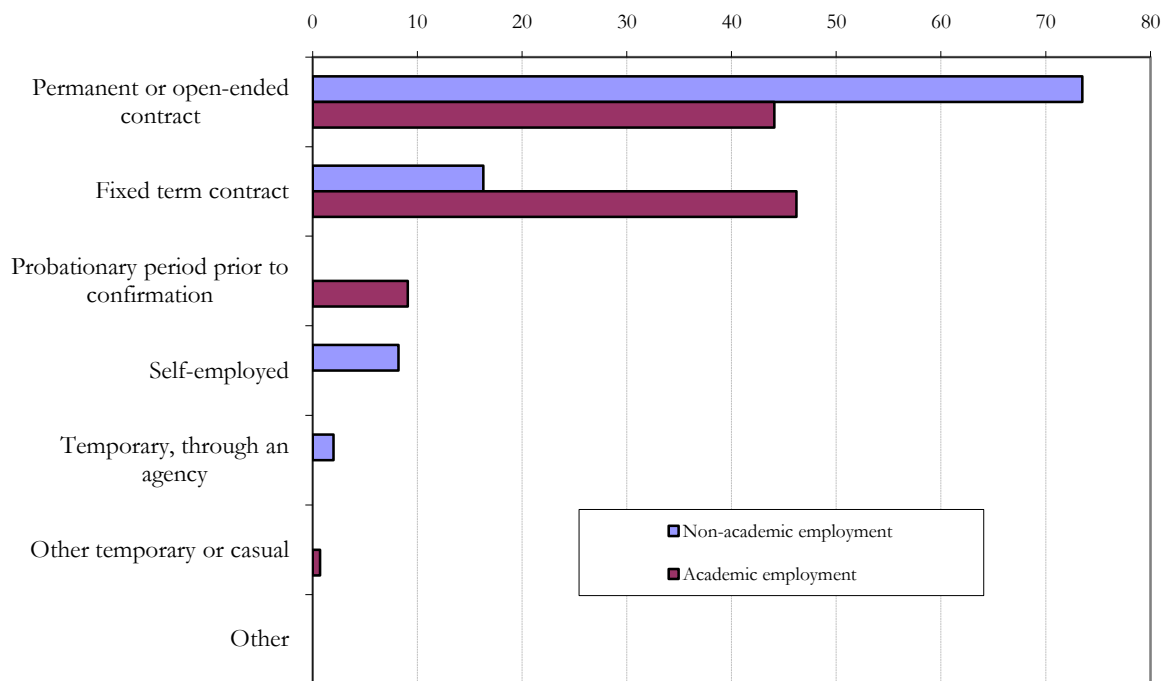
Source: Survey of 1998-2000 ESRC-funded PhDs

Table 3.4 shows the relative importance of the various methods used by social science PhD-holders to gain their jobs. For those in academia, internal advertising was clearly more important, together with 'headhunting' approaches and external advertising. For survey respondents in non-academic jobs, a higher proportion made direct contact with the organisation at which they were working at the time of the survey.

Table 3.4   Means by which heard about current job by type of employer

How respondent heard about job	Non-academic employment	Academic employment
Media advertisement (e.g. local/national press, internet)	33.3	52.8
Employer's website	9.8	9.7
Recruitment agency/website	3.9	2.8
I was headhunted	7.8	14.6
It was advertised internally in the organisation in which I worked/studied	11.8	17.4
Personal contacts, including family and friends	19.6	18.1
I approached the organisation directly	11.8	3.5
Careers service	3.9	0
Other	17.6	4.9

Source: Survey of 1998-2000 ESRC-funded PhDs

We asked respondents to tell us how important certain factors were in obtaining the jobs they held at the time of the survey. The factors listed are shown in Figure 3.5. These included the qualification they held, the subject they had studied and the university from which they had been awarded their PhD, skills developed, contacts made and experience gained. Those in non-academic jobs were less likely to list any of these factors more important than for the academic employees.

Figure 3.5   Factors relevant in obtaining current job by type of employer
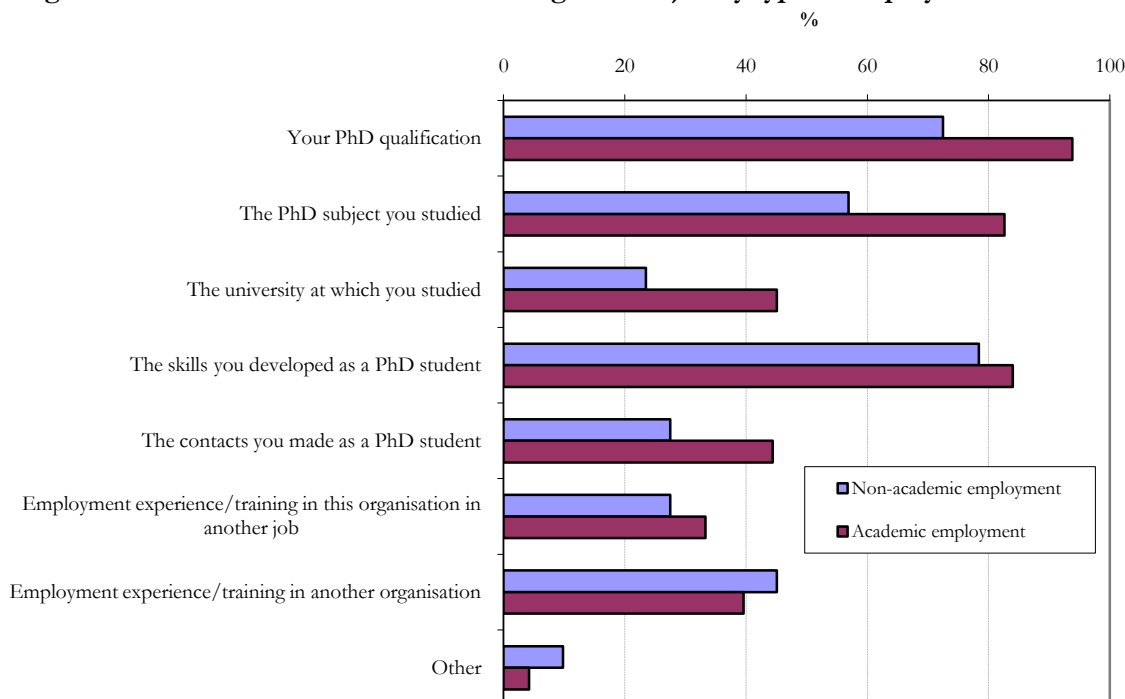
Source: Survey of 1998-2000 ESRC-funded PhDs

3.6   Skills developed and skills used by social science PhDs

An important aim of the survey is to determine the extent to which a wide range of skills were acquired by social science PhD researchers as part of their PhD studies and the extent to which their current jobs require such skills. We have divided skills into four groups, those which are specific research-related skills, those which are more general in nature, those which relate to research management and team working and those which we term 'personal and career development skills.

For each of these four groups of skills the format of the questions was the same. Tables 3.5 to 3.8 show the categories of skills as rows. Respondents were instructed as follows:

> 'Please examine the **research skills** listed below and indicate whether: **(a)** you received *formal* training in them as part of your PhD course, **(b)** you developed these skills in the process of doing your PhD, and **(c)** they are required in your current job. (*please mark **all** that apply*)'

Turning first to Table 3.5 we note that, with the exception of 'formulation of research problems', 'application of tools/methods' and 'development of theoretical concepts', the skill requirements of those in non-academic jobs are higher than for those in academic jobs. Also, research-related skills were developed in the process of doing the PhD rather than as formal training received as part of the PhD course.

Table 3.5   Comparison of specific research-related skills of PhD holders in academic and non-academic employment

Specific research-related skills (% positive responses)	Non-academic employment			Academic employment		
	Trained	Developed	Required	Trained	Developed	Required
Formulation of research problems	46.0	86.0	78.0	43.8	88.9	85.4
Understanding/applying a range of methods and tools	76.0	74.0	80.0	71.1	78.9	83.1
Using large scale datasets	46.9	68.8	65.6	42.6	63.8	58.5
Collection of qualitative data	70.7	75.6	80.5	66.4	71.4	73.9
Collection of quantitative data	61.4	56.8	75.0	63.6	62.7	53.4
Interpretation and presentation of qualitative data	55.8	69.8	83.7	61.7	72.5	75.8
Interpretation and presentation of quantitative data	61.4	56.8	84.1	65.8	67.5	62.3
Development of theoretical concepts	46.8	89.4	53.2	44.7	93.6	76.6
Development of critical thinking skills	42.0	98.0	88.0	41.8	92.9	85.8
Identification of own training needs	7.1	73.8	81.0	12.9	77.6	78.4

Source: Survey of 1998-2000 ESRC-funded PhDs

Table 3.6 shows similar information for a more general set of skills. The differences between those in academic and non-academic jobs are as one would expect – those in academic jobs are more likely to be required to employ skills associated with the use of bibliographic sources and methods and teaching compared with those in non-academic jobs.

Table 3.6   Comparison of general research-related skills of PhD holders in academic and non-academic employment

General research/ transferable skills (% positive responses)	Non-academic employment			Academic employment		
	Trained	Developed	Required	Trained	Developed	Required
Use of bibliographic sources and methods	71.4	87.8	69.4	42.4	91.0	86.8
Basic computing	45.1	92.2	92.2	34.8	83.0	93.6
Advanced computing	41.9	79.1	62.8	47.9	74.8	75.6
Foreign language skills	23.5	58.8	64.7	31.4	71.4	57.1
Written communication skills	34.0	94.0	98.0	29.8	89.4	95.0
Verbal communication skills	20.4	77.6	98.0	22.5	89.4	94.4
Teaching skills	47.5	77.5	50.0	34.5	80.6	79.9
Numeracy skills	57.1	69.0	78.6	43.4	69.9	80.5
Management of projects and resources	8.3	47.9	89.6	4.6	66.2	91.5
Leadership skills	4.5	25.0	93.2	2.9	43.3	92.3

Source: Survey of 1998-2000 ESRC-funded PhDs

Tables 3.7 and 3.8 show this information for research management and team working skills and for personal and career development skills. While skill requirements are high in both groups, within the former set of skills; those in non-academic jobs have strong requirements for time management skills, quality management, team working and interpersonal skills. 'Networking' is highlighted by both academic and non-academic employees as an important skill requirement, but one which is not well developed within their PhD courses, especially for those who entered non-academic jobs.

Table 3.7 **Comparison of research management and team working skills of PhD holders in academic and non-academic employment**

Research management and team working skills (% positive responses)	Non-academic employment			Academic employment		
	Trained	Developed	Required	Trained	Developed	Required
Decision making	0.0	62.5	95.8	3.0	80.3	94.7
Time/resource management	6.0	70.0	100.0	7.1	87.9	95.7
Quality management	4.8	61.9	100.0	5.8	73.3	93.0
Team working	6.1	30.6	100.0	6.7	54.2	94.2
Interpersonal skills	2.0	52.0	100.0	5.2	71.6	96.3
Information management	15.6	80.0	97.8	12.9	78.4	95.7
Research ethics	66.7	68.8	66.7	54.8	69.8	88.9
Knowledge of intellectual property rights	25.8	48.4	77.4	23.5	45.9	81.2
Dissemination and exploitation of research outcomes	37.2	72.1	88.4	27.3	78.4	96.4

Source: Survey of 1998-2000 ESRC-funded PhDs

Table 3.8 **Comparison of personal and career development skills of PhD holders in academic and non-academic employment**

Personal and career development skills (% positive responses)	Non-academic employment			Academic employment		
	Trained	Developed	Required	Trained	Developed	Required
Career planning	37.5	53.1	65.6	18.0	71.0	65.0
Identifying opportunities for employment	24.1	65.5	51.7	11.5	80.8	49.0
Identification of research funding opportunities	16.1	67.7	64.5	10.1	63.3	87.1
Networking	11.9	57.1	100.0	8.5	78.5	81.5
Self-promotion/marketing	11.4	54.3	91.4	5.2	74.0	82.3

Source: Survey of 1998-2000 ESRC-funded PhDs

When asked whether or not the subject/discipline knowledge they had acquired in the course of their PhD studies was used in their current employment, 90 per cent of those who held academic positions replied that this was the case, compared with three-quarters of those in non-academic jobs. Table 3.9 shows the overall assessment that respondent gave to their PhD research training. Similar proportions (8-10 per cent) of the academic and non-academic job holders stated that overall their research training had been not very useful or not at all useful. Those in academic jobs tended to respond by saying that their research training had been very useful, whereas equal proportions of the non-academic job holders replied that it was either very or quite useful.

Table 3.9   **Overall assessment of usefulness of PhD research training in relation to employment**

How useful overall has your research training been in relation to your employment?	Non-academic employment	Academic employment
Very useful	49.0%	71.1%
Quite useful	41.2%	20.4%
Not very useful	7.8%	7.7%
Not at all useful	2.0%	.7%
Total	100.0%	100.0%

Source: Survey of 1998-2000 ESRC-funded PhDs

3.7 Job satisfaction and appropriateness for PhD-holders

Thus far we have shown that the skills taught and/or developed on a PhD course tend to be used both by those in academic jobs and those in non-academic jobs, though to different extents depending upon the skills in question. More general and transferable skills are demanded by the employers of social science PhDs in non-academic jobs, although formal training in these skills is in short supply among the cohort of PhD-holders investigated in this study. We have shown also that salaries are, on average, higher for those in non-academic jobs than for those working in the higher education sector. What remains to be investigated is the degree of job satisfaction expressed by these highly qualified employees and their views on how appropriate or not their jobs are for PhD holders.

Considering first the issue of job satisfaction, we asked respondents to give a satisfaction rating for each of twelve aspects of their jobs, ranging from promotion to issues such as the opportunities their jobs afforded to learn new skills and to contribute new ideas. Figure 3.6 shows the full set of factors they rated, comparing the mean values attributed to these factors for those in academic employment with those in non-academic employment.

Figure 3.6   **Mean satisfaction scores with various aspects of jobs held by social science PhDs by type of employer**

Mean satisfaction score (1=not satisfied at all; 7 = completely satisfied)
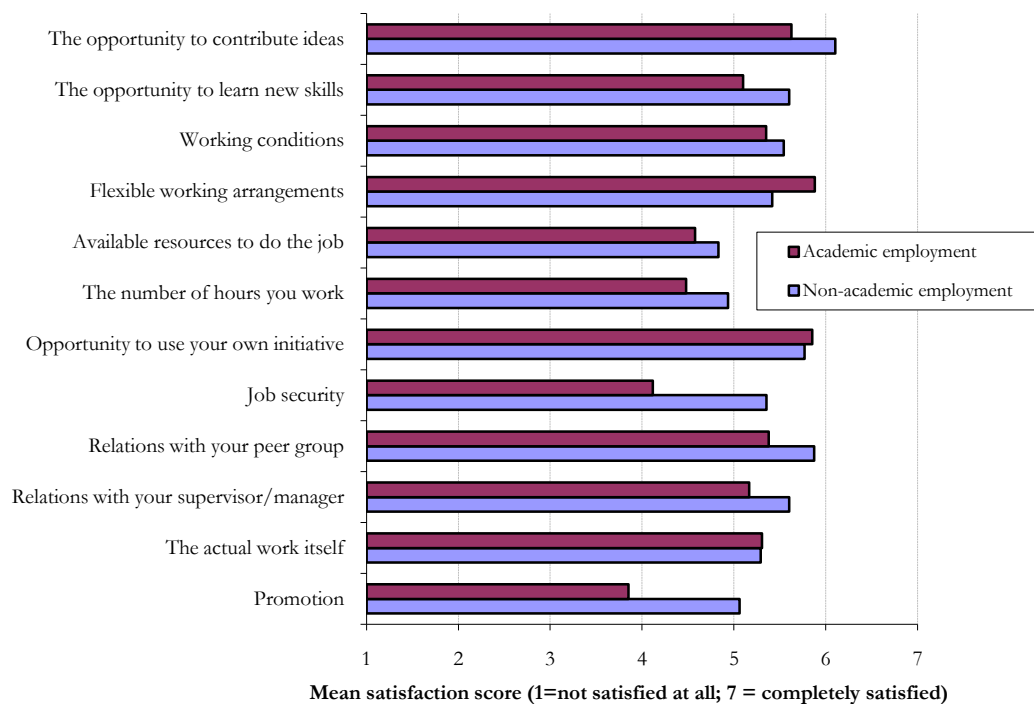
Source: Survey of 1998-2000 ESRC-funded PhDs

Interestingly, we note that on just about every aspect of their employment apart from the opportunity to use initiative and flexible working arrangements, those in non-academic jobs record higher mean satisfaction scores than for the non-academic employees. In two areas, promotion and job security, the non-academic employees provide satisfaction ratings which are very much higher than for those in academic jobs.

Figure 3.7   Mean overall job satisfaction scores for jobs held by social science PhDs by type of employer

Job satisfaction scale (1 = not satisfied at all; 7 = completely satisfied)
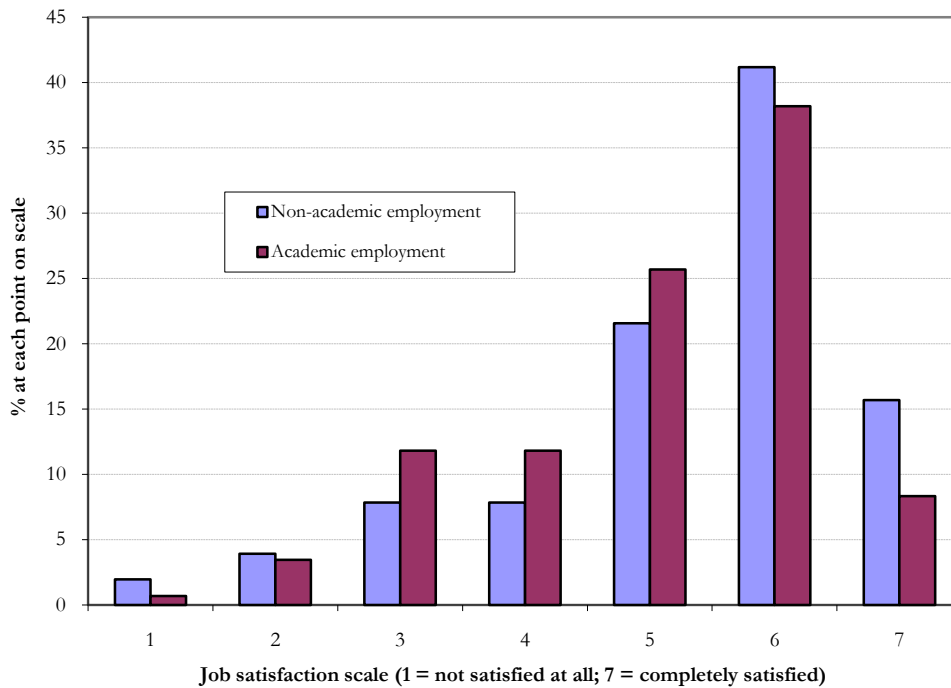
Source: Survey of 1998-2000 ESRC-funded PhDs

Having rated all these aspects of their jobs separately, we asked for an overall job satisfaction rating. The distribution of these ratings is shown in Figure 3.8. This reflects the preceding result, showing that, in proportional terms, twice as many non-academic as opposed to academic employees gave their jobs the maximum rating of 7 points.

Finally, we asked respondents to state, on a similar 7 point scale, the extent to which they thought that their job was appropriate for a social science PhD-holder, where a score of one meant 'very inappropriate' and seven meant 'ideal'. The difference in job ratings on this scale between those in academic and non-academic jobs is shown in Figure 3.8. A small proportion of the non-academic job holders (6 per cent) rated their jobs at '1' or '2' on this scale, indicating that they were not in an appropriate job for someone with their qualifications. Three-quarters of the academic job holders rated their jobs at '6' or '7' – the 'very appropriate' and 'ideal' end of this spectrum.

Figure 3.8   **Mean scores on an index of the extent to which respondent view their job as appropriate for someone with a social science PhD by type of employer**
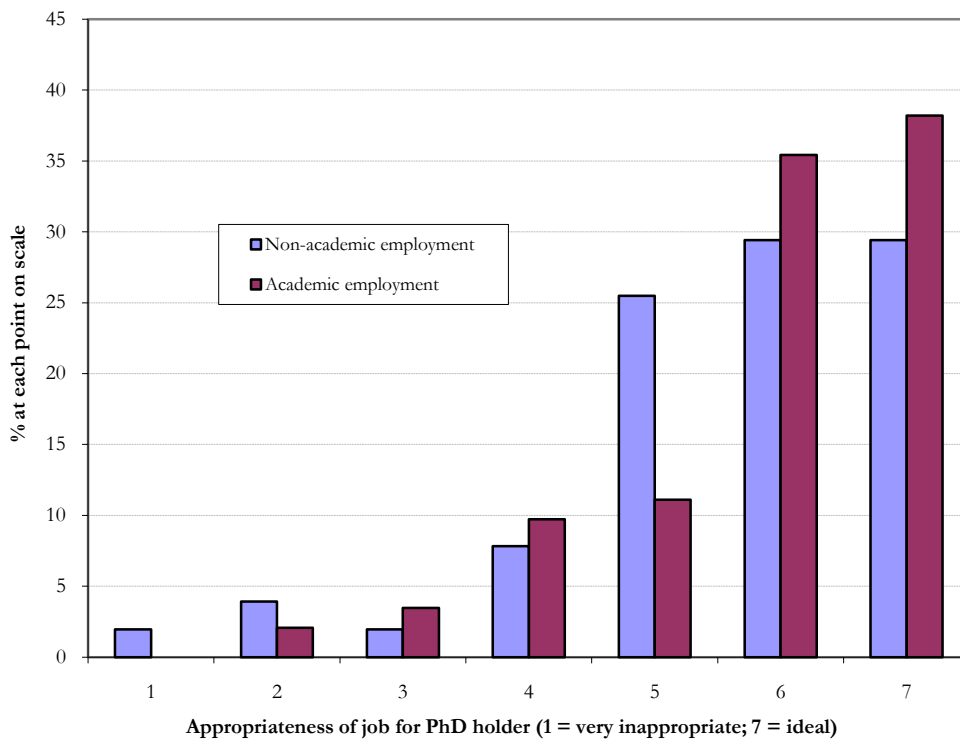
Source: Survey of 1998-2000 ESRC-funded PhDs Source: Survey of 1998-2000 ESRC-funded PhDs

3.8 Reflections on the postgraduate experience

At the end of the questionnaire, we invited former postgraduate PhD students to tell us about anything else they wanted to add that was relevant to the aims of the survey[9]. We were surprised at the extent of the response to this question, which prompted more than a third of respondents to describe in detail some of their experiences of PhD study and their subsequent transition to the labour market. These ranged from very specific comments about their PhD training, both positive and negative, to more general remarks about the extent they were prepared for their career.

A number of recurrent themes emerge from analysis of these comments. As was shown in Figure 3.6, the issue of job security is raised in over a quarter of these comments, mainly from those in academic employment, but also by some non-academic job holders as the reason they had taken such employment, as the following comment illustrates:

> *'I started my PhD wanting to be an academic, but was completely put off by it due to the 'working environment' including staff relations and lack of job security. As I have a young family it was absolutely essential for me to find a reasonably permanent job. This organisation has given me a great work/life balance (I work 4 days per week and look after children on one day) and has given me the chance to develop my career as a researcher. I am now a project leader for several large scale projects and have lots of opportunities to develop my skills within a very pleasant collegial working environment.'*
> (Male, Senior Research Officer, Independent Research Organisation, Education Research)

Others remarked that, despite their research training, the nature of their academic employment was such that they were contemplating a shift to non-academic jobs:

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[9]   The request made was 'We will be very interested in any further comments that you wish to make about your experience as a PhD student, your transition to the labour market, further training, your career development and any future plans and aspirations.'

'I am currently thinking about changing career, despite the fact that I love doing research work and think it's what I am best at. It's too pressurised and uncertain, with fixed contracts for 1, 2 or 3 years at most. The pay also is not brilliant, considering the expertise and skills required.'

(Female, Research Officer, contract research, Language and Communication Research)

'I wanted to continue a career in research, but this is simply not possible given the nature of research funding.'

(Female, Research Fellow, Russian Studies/Health Promotion)

'I am concerned about future stages of my career in that there exists only a very insecure career structure for researchers within academia...Current forms of post-doctoral research funding tend to assume an ability and willingness to move around the world every two or three years and entail a rapid cycle of application writing and very short-term job security, meanwhile, top class researchers in permanent jobs spend most of their time on teaching and administration.'

(Male, Research Fellow, Linguistics)

'My PhD was a great experience and made me think it was an academic career I wanted to pursue. Having done so however, like many young academics, it is not how I expected it to be, and the pressure to succeed in so many areas is very stressful. I am considering leaving and pursuing another career, possibly research in a public or private arena, but I anticipate my PhD to be an advantage in that pursuit.'

(Female, Lecturer, Geography)

The difficulties of balancing short-term and normally poorly paid employment and academic career development were a common theme, but those fortunate enough to have been awarded an ESRC Postdoctoral fellowship were unanimous in the advantage that that had provided to enable them to make the transition from PhD student to academic:

'...the single largest factor preventing my career progression is the difficulty of turning a PhD thesis into a book whilst engaged in temporary teaching contracts. I was lucky to be awarded an ESRC one year post doctoral fellowship, that allowed me to make significant progress in this direction and to publish part of the thesis as articles in journals..'

(Male, Temporary Lecturer, Social Anthropology)

A significant number of comments related to the extent to which their research training had left them unprepared for a career outside academia (and, in some cases, inside academia):

'When I took my PhD it was wrongly assumed that I wanted to pursue an academic career and much training was geared directly toward making me a useful postdoc researcher. (It was never my intention to enter academia). The fact that I wanted to go into industry was ignored. Much stronger ties with industry should be fostered.'

(Male, Principal Clinical Safety Scientist, Biopsychology)

'Little guidance was provided to me by the academic staff who suggested I do a PhD about the career options that a PhD in the field in which I researched would open and close. Nothing was said about the possibility of consider developing skills related to other types of employment. My PhD thus led inexorably to an academic career. In hindsight, if I could turn back the clock, I would think I might choose a different career and that, although I would still do a PhD, I would choose a research topic and strategy for doing which would leave more career options open.'

(Female, Lecturer, Russian and East European Studies)

'A strong feeling I had, though, was that my PhD course had provided little in the way of preparation for a career in educational research i.e. employment opportunities, career paths, sources of information, issues to consider etc. My sense is that career paths are becoming ever more complex and individual, and there is a need for university PhD course to engage with the fact that a PhD can no longer be thought of solely as a preparation for an academic career. PhD course also need to cover much more than research skills.'

(Male, self-employed Educational Research Consultant, Education)

'I would have also appreciated more training in finding research funding and "marketing" one's ideas in an academic world.'

(Female, Lecturer, Psychology)

The nature of the research training they had received was also a popular topic among these comments. Quantitative skills were mentioned by a number of respondents, usually critical of the teaching of these skills as the following comment illustrates:

'Research training during my PhD was of varied quality. Quantitative techniques were poorly taught, and, in my opinion, too much time was spent on intellectual property rights at the expense of qualitative research techniques…I have been frustrated that in contract research there seems to be little call for the critical thinking skills demanded by a PhD.'

(Male, Research Associate, Human Geography)

Those most confident that their training had provided adequate coverage of research methods tended to be those who had completed Masters' degrees prior to their PhDs and many commented that they had learned most about research methodologies and sometimes also related skills at that stage of their career development:

'I received extensive and excellent training in research and transferable skills on my MSc in Educational Research Methodology at [university x]*, for which I received an ESRC Advanced Course Studentship. Because I had this qualification, I was exempted from all research training programmes during my PhD study at* [university y]*…so it should not be inferred from my answers to this questionnaire that research training opportunities for PhD students at* [university y] *are limited'*

(Male, Lecturer, Educational Studies)

Several respondents commented on the usefulness of short 'external' methods or career development courses, both among these ESRC-funded PhD-holders and in interviews with other PhD graduates, discussed in the chapter that follows:

'The CRAC careers course I went on towards the end of my PhD, sponsored by the ESRC, was helpful, although more oriented towards science PhDs than other disciplines. I was very fortunate in being offered a post-doctoral fellowship prior to the completion of my PhD. However, I would have benefited greatly from careers guidance aimed at doctoral students. Once I had decided to look for work outside my academic field it was difficult, my lack of [non-academic related] *work experience was a disadvantage. I also feel that, at the application stage at least, my PhD worked against me as I was considered to be over qualified.''*

(Female, Senior Research Administrator, Sociolinguistics)

I found the CRAC course to be invaluable in giving me the skills and confidence to pursue a career outside academia - I think the course is such an investment from ESRC and other funding bodies in PhD students. Since joining my current organisation we have funded two CASE studentships with [a local university] *which is largely as a result of my positive experiences as a PhD student and ESRC funded. Working in an environment of senior police officers and senior civil servants I have found the skills and fact of having a PhD to be priceless in enabling me to do my job and to have credibility with my peers.''*

(Female, Doctrine Manager, Public Sector, Law)

While many respondents stated how much they had appreciated the opportunity that ESRC funding had given them to engage in their PhD studies, there were numerous comments about the need for more generic skills training, neatly summarised in this comment from a PhD-holder in a non-academic job:

> *'University proved most useful in widening my horizons and drawing out transferable skills to other sectors. Essentially it is these skills which should be nurtured and developed explicitly alongside the research skills set. …universities must understand that a significant proportion of all their post-graduates will not remain in the higher education sector and it would be to the benefit of all to develop the generic skills required for wider employment.'*
>
> (Male, Head of Policy Research in commercial research consultancy, Urban Planning and Conservation)

3.9 Summary

A number of findings from this survey are noteworthy and relevant to the current debate about the state of postgraduate training for social scientists. Before listing these, it is worth considering a more general issue about academic versus non-academic employment. A PhD in the social sciences is viewed by many higher education institutions nowadays as a prerequisite for academic employment, whether in a post which is primarily research orientated or one devoted principally to teaching. Non-academic employment may, then, be a consequence of an oversupply of highly qualified and trained social scientists.

We have little evidence to this effect. While fewer of the social science PhDs who responded to this survey reported that they were in employment related to their long term plans than was the case for those in academic employment, those in non-academic jobs reported significantly higher salaries, other conditions of employment which they found attractive, better job security and the fact that such jobs offered them the chance to develop new skills compared with those in academic jobs. When asked if they had experienced difficulty in obtaining employment, only 12 per cent of those in non-academic jobs stated that this had been the case, compared with 20 per cent of academic job holders. When asked to report on levels of satisfaction with a wide variety of aspects of their jobs, the non-academic job holders reported higher levels of job satisfaction on virtually all aspects apart from the flexibility of their working arrangements. None of these findings is consistent with the view that those in non-academic jobs are 'frustrated academics'. On the contrary, they appear to be making good use of their skills and training in these jobs and deriving significant benefits from so doing.

Turning to their skills and training, we asked for information across a wide range of skills, from those which are specifically research, those which we classified (in line with Roberts and the current Research Councils and QAA guidelines) as more general skills, research management and team working skills and career development skills. We asked about the extent to which they had received formal training in each skill area as part of their PhD studies and the extent to which these skills were developed in the process of undertaking their PhD. Importantly, we enquired also as to whether these skills were *required* (as opposed to *used*) in their current jobs.

In terms of specific research-related skills, both academic and non-academic job holders reported similar requirements in their jobs for a wide range of research relevant skills. On the whole, these had been developed in the course of their PhD studies rather than provided via formal training courses and the like. Given that this cohort of PhD completers (1998 to 2002) undertook their studies prior to implantations of recommendations arising from the Roberts review, this is unsurprising. However, the strong employment requirements for such skills highlight the importance of formal training in these areas. We note also that skills related to the collection, interpretation and presentation of data (both qualitative and quantitative) are strong employment requirements for both academic job holders and those in non-academic employment, yet these are not reported as having been provided or developed to such an extent in the course of their PhD studies. There is also a clear demand for formal training associated with the identification of training needs.

Turning now to the more general/transferable skills, two areas stand out as being very high in terms of job requirements, yet were not developed during PhD studies by formal or informal methods. These are project management skills and leadership skills. Formal training in these areas was virtually negligible and, unsurprisingly, they were not developed in the course of

studies. However, nine out of ten respondents in both non-academic *and* academic jobs stated that these skills were required by their employers.

For research management and team working skills, both groups reported that such skills were strong employment requirements, yet the incidence of formal training for such skills was very low. Equally, for career development and personal progression (particularly what we classed as 'self-promotion' – CV writing, press and media relations, image-building), the requirements of the jobs held were high whilst training and development was in short supply.

Chapter Four

The fit between postgraduate research skills and employer needs: the employee's perspective

4.1   Introduction

The findings presented in this chapter are based on thirty-one telephone interviews conducted with social science PhD graduates between October 2004 and May 2005. The purpose of these interviews was to explore respondents' experiences as PhD students, career history to date, current employment situation and career development. A core element of this research has been to establish the relationship between the research and related skills developed on PhD programmes, access to employment and the skills required in the employment that highly qualified social scientists had obtained. We were also concerned to establish the extent to which the training they received had met, or fell short of, the recommendations of the Roberts Report (2002).

The Roberts Report outlines the joint statement of the Research Councils skills training requirements for research students. This sets out the skills that doctoral research students, funded by the Research Councils, are now expected to have developed by the end of their research training. These skills may be present on commencement, explicitly taught, or developed during the course of the research and include not only training in research methods and methodologies but also broader, transferable skills development such as research management skills, ethics training, data protection awareness, communication skills and career management skills. The acquisition of such skills by social science PhD graduates was explored with interviewees to establish to what extent, if any, these skills had been formally taught as part of their PhD studies.   It should be noted that the majority of respondents had completed their PhDs before the Roberts Report was published in 2002[10].

4.2   Sources, data collection and structure of the chapter

The majority of interviewees were selected from the *Seven Years On* (2002/03 survey of 1995 graduates) and *Class of '99* (2003/04 survey of 1999 graduates) databases. Graduates who had participated in these studies, had studied in the social sciences for their first degree and had indicated in their responses that they were either studying for or had completed a PhD, and who had indicated that they would be interested in taking part in a follow-up study, were approached via email or post and invited to take part in a telephone interview for this study. They were asked first, whether they had completed, or were near to completing, a PhD and second, whether they were in employment.

A total of twenty eight potential participants were identified and emailed from the *Seven Years On* database and invited to take part. Sixteen replies were received, with eight suitable for interview because they had completed PhDs, or were close to completing, and were in employment. The remaining eight had either not completed their PhDs or had not studied for a social science PhD. All eight of the suitably-qualified respondents were interviewed; six fully qualified and two in the final stages of writing up their PhD, already in employment.

In a similar way, fifteen possible participants were identified and emailed from the *Class of '99* database. Ten replies were received and seven interviewed, the remaining three either not near to completing or turned out not to have studied for a social science PhD.   Five of the seven interviewed had not yet submitted their PhDs, were in the final stages of writing-up and three of these were in employment.   The two who were not currently in employment had work experience on which they could draw. The total interviewed from this cohort was seven.

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10   See Appendix 2: the PhD-holders' interview schedule.

In total, fifteen interviews were conducted with participants from the *Seven Years On* and *Class of '99* databases. This was less than had been planned, so the sample was amplified by the addition of a further seven PhD-holders who had graduated between 1998-2002, identified by colleagues in higher education institutions as PhD graduates whom they had supervised who they knew to be working in non-academic employment.

A further nine interviews were also conducted with social science PhD graduates from the ESRC-funded 1998-2002 sample who had completed the on-line questionnaire described in the preceding chapter. From this source, thirty-three respondents in non-academic employment had indicated that they would be interested in participating in a follow-up interview. Fifteen were selected across a broad spectrum of employment in both the public and private sectors and the nine who responded were subsequently interviewed, using a modified interview schedule to take account of the fact that they had already completed the online questionnaire. Interviewees were employed in a range of jobs and sectors as follows[11]:

JOB TITLE	EMPLOYER/INDUSTRY
Private sector:	
Client Financial Management Specialist	Consulting bank
Consultant	Self-employed
Head of Environment and Waste Management	Regional planning
Actuarial tutor	Professional education services
Head of Environment and Waste Management (Research)	Research and consultancy
Design and Research Manager (Europe)	Internet media company
Economist	HR and Actuarial Consultancy
Director of Resourcing	Financial and Management Consultancy
Public Sector:	
Management Consultant	Private business
Clinical Psychologist, (4)	NHS
IT Strategy Manager	Local government
Researcher	Local government
Consumer Services Manager	NHS
Research Intelligence Officer	Local government
Senior Science Officer	Local government
Research Officer	General practice consortium
Review and evaluation manager	NHS
Parliamentary Private Secretary	House of Commons
Senior Researcher	NHS
Lecturer/senior lecturer (4)	Higher education
Research Assistant	Higher education
Library Assistant	Higher education

Thus, in total, 31 graduates who had undertaken PhDs were interviewed. The duration of the interviews was approximately 45-60 minutes and all interviews were tape recorded with the interviewees' consent. Interviews took place either during the interviewees' working hours or during the evening, at home. In most cases, we were able to draw on the extensive work history and demographic information that we already had for respondents as a basis for interviewing them in detail about their work histories and current employment. The priority was to investigate the choices they had made, the options they perceived to have been available to them and the reasons they believed that they had been recruited by their current employers.

This Chapter thus draws upon a wide range of employment, with the majority of respondents interviewed selected to provide insight into the experience of those in non-academic employment (eight in the private and fifteen in the public, non-academic sectors). The next section explores respondents' motivations to study for a PhD and their awareness of employment options both

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[11] Three were not currently in employment or seeking employment

before and after completing the PhD. This is followed with a section which identifies the main skills respondents developed during their PhDs, their perceived lack of training during this time, research methods and general skills training and sources of PhD funding. Section 4.5 highlights respondents' current employment status, the relevance of their PhD to their current employment, their perceived and experienced advantages of studying for a PhD when applying for jobs, transferability of skills and knowledge from the PhD to employment, sources of recruitment and salary levels. Section 4.6 identifies career development, level of satisfaction with current employment and what respondents most value about their experience of PhD study.

4.3   Reasons for PhD study

Just over half of all respondents said that their motivation to study for a PhD had been either because it was essential for their chosen career path or because they felt it would improve their career prospects: a clearly instrumental orientation. A third of respondents also said that they had an interest in the topic area and wished to carry out a further, in-depth study, reflecting a strong interest in their chosen field of study.

Ten respondents said that a PhD qualification was essential for their career plans (clinical psychologists, academics and a tutor employed in the private sector):

> *"I decided to study for a PhD because it is essential for clinical psychology as a professional qualification and I had already decided that I wanted to work as a clinical psychologist"."*
>
> (Clinical Psychologist, public sector)

> *"…because I've always wanted to have a career where I could spend a lot of time working in a university and a PhD was necessary for that."*
>
> (University Lecturer)

Four respondents also stated that they had decided to study for a PhD to improve their career prospects and three because they aspired to an academic career.

The second reason mentioned by respondents (10) was because they had an interest in the topic area and wanted to carry out a further, in-depth study:

> "*I decided to study for a PhD for several reasons. I come from a very academic family (my father also has a PhD) but the main reason is because I really enjoyed studying and wanted to study an area of interest to me in more depth. My motivation was therefore predominantly through personal interest. I also considered that a PhD would offer the possibility of an academic career."*
>
> (Financial Management Specialist, private sector)

Four respondents said that they decided to study for a PhD because the opportunity has arisen:

"…*because I didn't know what I wanted to do after completing my undergraduate degree. The opportunity to do an MPhil came up but the department in which I was studying was closing so I took the opportunity to do a PhD* [at another university]*.*"
(Research Manager, public sector, currently at home with child, not seeking employment)

"*I decided to study for a PhD mainly because the opportunity arose through an advertisement in the Guardian newspaper for a PhD studentship. I also wanted to see how far I could get with my studying; I was the only person in my family at university and it seemed natural to keep going.*"
(Research Intelligence Officer, public sector)

Other reasons mentioned by respondents were for intrinsic reasons: in one case, the PhD was described as "a personal challenge" and in another, "something I really wanted to do... I just quite liked the idea of attaining that kind of level of academic achievement" and for more passive reasons in seven cases: that they had been encouraged to apply by staff by whom they had been previously taught (3) that they "didn't know what to do after completing a degree" (2), "not being able to find a job" (1) and "boredom with current job" (1).

The range of PhD topics studied amongst respondents with social science PhDs includes: psychology, social history, management science, organizational studies, health informatics, industrial relations, sociology, politics, waste management, development planning, economics, anthropology and health.

Awareness of employment options before and after completing a PhD

Respondents were asked whether they had any idea what employment options might be available to them at the beginning of their PhD. This was to try to establish the career motivations of these highly qualified social scientists in terms of whether they had considered the long-term implications of studying for a PhD and the extent to which they were focused on their long-term goals. Over half of respondents (17) said that they had a clear idea, the majority because they wanted to gain either a professional qualification (e.g. clinical psychologists) or qualify for an academic career. Eleven stated that they had no idea of the employment options that might be available to them, indicating that they had no clear career aspirations and goals at that time.

"*I had a relatively good general idea of what I could do, as an economist. I could work for the government or go into the city or there was potential for economic consultancy. Those were the three main avenues. I found out about this type of organisation about two thirds through my PhD.*"
(Economist, private sector)

"*I certainly did in the sense that when I started, I viewed the PhD as being a direct route to a permanent post in academia, that was my sole motivation in going back to university to do a Masters' and then a PhD.*"
(Actuarial Tutor, private sector)

However, the lack of clear career aspirations and orientations was clear:

"*I had no idea about what employment options might be available to me at the beginning of my PhD. I think I just did a PhD for the sake of it and hoped for the best.*"
(Research Intelligence Officer, public sector)

"*I had no idea at all of what employment options might be available to me at the beginning of my PhD. I didn't do the PhD for that reason. I was interested in the area of equal opportunities and thought that*

> *a PhD would give me credibility in that area. Therefore, I was starting to have an idea that I might want to work in that area."*
>
> <div align="right">(Self-employed Consultant, private sector)</div>

> *"I was drifting towards a lectureship or a research job."*
>
> <div align="right">(Local Government Researcher)</div>

Respondents were much more clearly focused in terms of career orientations once they had completed their PhDs, with an increased number (24) stated that they had a clear idea, at this stage about what they wanted to do next:

> "I *was starting to have an idea that I might want to work in that area. By the time I had submitted my PhD, I started to have a clear idea of what I wanted to do. In exchange for access to the case study organizations, I gave a consultancy report to each company and started to realize there was a market."*
>
> <div align="right">(Self-employed Consultant, private sector)</div>

> "*By the time I had submitted my PhD, I did have a clear idea of what I wanted to do next as by that time I was employed at* [university] *it was clear to me that by then lecturing wasn't my preferred route. I loved the research and by that time, I knew I wanted to be a researcher."*
>
> <div align="right">(Local Government Researcher)</div>

One respondent pointed out that although he had intended to take the academic career route, job opportunities had arisen in other areas of employment:

> *"No, I ended up where I am not because I chose to go there, I took the opportunities when they happened but I think in many ways my dream at the end of my PhD was to become an academic and do more research and teach."*
>
> <div align="right">(Design and Research Manager, private sector)</div>

4.4   Research methods and general research skills training

We were interested in the range of research methods that had been taught to these highly qualified social scientists to establish the types of skills they had acquired during their studies and were transferring into the paid labour market. Of those who had not completed the on-line questionnaire (22), a high number (16) had been required to take research methods training as part of their PhD. For the six who had not, reasons cited were that they had already gained a Masters' degree, because the topic was already set-up and because the supervisor preferred "learning on the job". There are no data available for those who were interviewed in follow-up to the completion of an on-line questionnaire.

The type of training varied but just under half (15) of all respondents had received research training in both qualitative and quantitative methods, indicating the use of a mixed method approach to learning in their higher education institution. Qualitative methods were the preferred choice for a single methods teaching approach, as eleven had received this type of training whilst only three were taught quantitative methods from a single methods approach. Three respondents had received no training at all.

Of the 22 respondents who had not completed the on-line questionnaire, six had received external research methods training (outside of their university) in courses such as, statistics, writing for research, methodology, qualitative research and general methods. There is no data available for those who were interviewed in follow-up to the completion of an on-line questionnaire.

Given the considerable attention currently being paid by the UK research agencies to broader skills development for personal and professional development on PhD programmes, and following the recommendations of the Roberts Report, respondents were asked the extent to

which they had been given the opportunity to develop a broader range of skills during their PhD programme (research management, communication and career management skills). In total, around a quarter (8) said that they had received some formal training in research management skills (project, time and resource management and identifying sources of research funding), while just under half (15) had received some formal training in communication skills (written and verbal communication, networking, leadership, team-working,) and one sixth (5) had received some formal training in career management skills (CV writing, job interview techniques, self-presentation and career planning). These figures indicate that the training received by highly qualified social scientists fell short of the Roberts Report recommendations, but indicates that some HEI departments were 'ahead of the game' – but the pattern revealed identifies the areas in which there is scope for improved training in the future.

In terms of funding, of the 22 respondents who had not completed the on-line questionnaire, funding for their PhD had been acquired through several routes: three had been funded by the ESRC; five by the NHS; nine through university scholarships; one was funded by his employer with a supplementary scholarship from his institution; two were entirely self-funded; one was funded by her employer; and one by the British Academy. Those interviewed as follow-ups to the completion of the on-line questionnaire were, of course, ESRC-funded postgraduates.

Skills developed during PhD

Given that the majority of respondents had received formal research methods training but had not received adequate training in broader-based skills, we were interested in respondents' views about the most important skills they felt, in hindsight, they had developed during their PhD training. Most respondents mentioned a wide range of skills but most mentioned writing skills as the main skill developed, which is identified above as a 'communication skill' under the category of broad-based skills development, followed by general research and research design skills, interviewing skills, formulating a research question and statistical skills (SPSS, data analysis, managing quantitative data). Broader skills development was mentioned as often as research methods training:

> *"Statistical skills and research design and methodology – how to design robust studies and a whole range of methodology, qualitative and quantitative."*
>
> (Research Intelligence Officer, public sector)

> *"Trying to develop statistical skills, learning about research design and how to implement design into the study."*
>
> (not currently in employment)

> *"I learnt to write clearly and concisely, to present material to peer groups, conferences and seminars."*
>
> (Clinical Psychologist, public sector)

> *"…how to do good research, how to write unbiased questions, what makes a good question. I also learnt a lot about a survey and the theoretical side was about expanding my knowledge."*
>
> (self-employed Consultant, private sector)

> *"Developing a good research question and thinking about how I was going to implement that into a clinical setting. That was a real challenge in practice."*
>
> (Clinical Psychologist, public sector)

> *"SPSS largely, I picked up a lot of statistical knowledge, far more than through my degree. Also, organising myself to manage study files and making sure the data was stored and locked away. Ensuring data was clean and accurate. Also literature searching at a greater length and writing skills."*
>
> (University Research Assistant)

"Looking back now, but I wouldn't have said this at the time, the confidence to draw my own conclusions from what was in front of me. Not to place undue emphasis on issues of methodology and epistemology, which was very high profile at the time, especially in postgraduate research? Also, time management and rudimentary project management. Project management would be a much more useful skill to teach."

(Senior Research Officer, public sector)

"…definitely organisational ability, so being able to structure things. The technical aspects of it I've got to say were probably some of the most valuable, just because in doing the PhD, you really had to think about methodology and structure and how you run a project like that [involving psychometric testing of an occupational group] *and how you get the results, how you are going to get the results that you need in the time frames, regardless of what those results are positive or negative. But the thing about programme management I think was really key. I think also the fact that you need to think about the tests that you were doing on the data and how the methodology was constructed. So there was something about taking existing techniques and adapting them for use in your study, that was really important, that was a skill.*

I've always been fairly confident as a presenter, but I think I developed presentational skills. Although I was quite comfortable, so I might not have been the best presenter in the world, but I was comfortable as a presenter going into the project. But I think that you certainly got more experience of that.

I think the kind of analytical thinking skills, all of that, is really important. Being able to come from big picture down to a very specific set of findings and then back up to big picture implication. So I think this sort of being able to balance detail and the more strategic overview, I think, is something that a study like that gives you."

(Director of Resourcing, private sector)

Skill-development deficiencies in PhD training

Importantly, given the lack of training that respondents had received in broader-based skills development and that a relatively small number had received training in both qualitative and quantitative research methods, we wanted to know whether respondents felt that there were any areas of research in which they felt, with hindsight, that they would have benefited from having more training. Eight respondents stated that they would have benefited from more qualitative and seven from more quantitative training, while two stated that they would have benefited from having more SPSS training, two mentioned methodological training and two mentioned training in ethics. More than one respondent indicated that they had been allowed to concentrate on research methods they planned to use rather than extend their knowledge of those they were less interested in, or lacked confidence in using:

"[I would have like training in] *SPSS. I'm not very statistically minded and I was very lazy and I found a friend in the statistics department and she did everything for me, she was interested in my topic…I haven't got that kind of mind."*

(Self-employed Consultant, private sector)

"Definitely. I would like to know more about quantitative and statistical methods. I've done a basic statistics course as part of my degree but it went 'in one ear and out the other'. I teach on the undergraduate methods course and sometimes postgraduate and I'm very aware that it's qualitatively based. My quantitative knowledge is limited to very basic statistical analysis, descriptive statistics. It's out of my comfort zone."

(University Lecturer)

Quantitative skills were the most frequently mentioned lacuna in development opportunities, although training in qualitative data analysis also cropped up frequently:

"Quantitative methods would have been very useful for what I do now. At the time it wasn't offered or relevant. If I could do things differently, I would probably have done an MPhil which is a year of structured teaching followed by exams, followed by a year's research and convert that into the first year of your PhD. It takes longer but you would learn a lot of useful methods. That would have been useful."

(Financial Management Specialist, private sector)

"Definitely. I would like to know more about quantitative and statistical methods. I've done a basic statistics course as part of my degree but it went 'in one ear and out the other'. I teach on the undergraduate methods course and sometimes postgraduate and I'm very aware that it's qualitatively based. My quantitative knowledge is limited to very basic statistical analysis, descriptive statistics. It's out of my comfort zone."

(University Lecturer)

"Statistics. I still want more training. One of my supervisors is a statistician and I have the skills to apply certain levels of statistics but I'm still not confident to be able to do it independently. I'm not sure I ever will be. I would like to raise my level of knowledge and also in the application of statistics. I'm not a hundred per cent sure that I'm always choosing the right test."

(University Lecturer)

"There could have been more quantitative research and to have more teaching about the criticisms of it. That would have been more helpful. And more depth in terms of qualitative analysis. We had maybe a three-hour session on it but sometimes it felt quite lacking."

(Clinical Psychologist, public sector)

"SPSS, I would have benefited from more training, perhaps a few more weeks on it. We could have played around with it a bit and got to know it slightly better, but due to class sizes and the tutor it was too brief. I would also have liked to have had more on the practical side of qualitative research."

(University Lecturer)

"Yes, definitely, in qualitative methods. I had a disastrous experience with the research…and had to repeat the qualitative analysis for the thesis. There was a problem with the scale of the work and the way I had written up the qualitative findings."

(Clinical Psychologist, public sector)

Collusion by supervisors in protecting graduates from research methods training was mentioned more than once:

"I was not required to take research methods training as part of my MPhil. My supervisor was adamant that I would not take research methods training and as this type of training was not compulsory, he got away with it. He preferred that we learned 'on the job' as opposed to formal classroom learning. At the time, I was all for that and did learn a lot, but I think I could have sat in on some research methods classes. By learning on the job, we didn't learn as much as we could have and I'm aware now that there are certain gaps in my knowledge which a formal class would have helped with. ..In hindsight, I feel I would have benefited from having more training on the theory behind methods and why we chose particular research designs. The project was already set out in terms of what we were going to do, but it would have been useful to have had more training in different methods and why they are used. At the time, I didn't know much about qualitative research and that would have been quite useful to know."

(Research Assistant on fixed-term contract in university, psychology PhD)

Those who had gone on to do research careers, particularly outside academia, were more likely to have commented on the value of a broader research methods education or the lack of it. For example:

"In terms of employment, now, things like focus groups which are very much used in social research. I would have benefited from more training in these areas. Otherwise, there was quite good coverage."

(Research Intelligence Officer, Public sector)

Those with aspirations to remain in academic employment were more likely to have mentioned professional skills associated with successful academic careers, both positively and negatively, as skills they had had the opportunity (or not) to develop. For example:

> *"… I applied for funding with my supervisor three times but was unsuccessful. I wasn't well informed about how to make a good application at the time. That is an area where I feel I could have had more help."*
>
> (Library Assistant with degree in sociology)

Only one respondent mentioned that he would have benefited from training in presentation skills.

4.5 Current employment situation

Twenty-eight of the thirty-one respondents were in employment at the time of interview, twenty-two on full-time permanent and three on full-time fixed-term contracts, one was self-employed and three were not currently in employment or seeking employment; one because she had had a baby and was being a full-time carer and two of the 1999 graduates because they were in the final stages of writing their theses. Fifteen were employed in the public sector, four in the university sector, and eight in the private sector. Three were not currently in employment or seeking work: one respondent had given up paid work following the birth of a baby and two were in the final stages of writing-up their PhDs.

Relevance of PhD to current employment

Of the twenty-eight employed respondents, only seven stated that their PhD qualification was an essential requirement for their current job (two clinical psychologists, three academics and a management consultant). Eight (five from the public, three from the private sectors) stated that having a PhD was identified as being 'desirable' in the job specification, because 'it helped to have a PhD', and 'due to research skills' whilst 12 stated that the PhD was not identified as being either 'essential' or 'desirable' but 6 of these said that a postgraduate qualification, such as an MSc, was essential. However, the line between perceptions of 'required' and 'not required' was sometimes hazy, as the example of the Director of Resourcing in the large financial consultancy illustrates. His first job after completing his PhD had been in manufacturing – a job for which he had been head-hunted on the basis of his PhD-learned psychometric and industrial psychology skills:

> *"…when I was at [the automotive manufacturer] I was responsible for the occupational psychology, they had an occupational psychology department and organisational development. Then from there I then went onto* [a financial consultancy firm]*, where I started to get involved in recruitment, that's really what they bought me in to do."*
>
> (Director of Resourcing, Private sector)

Advantages of a PhD qualification when applying for jobs

Of the 28 in employment, 19 felt that having a PhD was an advantage when applying for their current job:

> *"It allowed me the luxury of developing skills without the pressures of a job."*
>
> (Research Intelligence Officer, Public sector)

> *"What I do maintain is that you learn to be perceptive and rigorous through doing the PhD which you do at a more senior level in this organization. What I find is that I can stand back and look at the broader picture more than my peer group, who often don't understand what I'm talking about because they're narrowly focused and they don't think more broadly."*
>
> (Financial Management Specialist, Private sector)

"I feel it's an advantage. It gives you good rigorous training in regard to methodology and although I don't use it on a day-to-day basis, part of my job requires me to keep up-to-date with the literature, to critically evaluate relevant theories that are applicable to the work I do. It was also a learning experience from a personal point of view."

(Clinical Psychologist, Public sector)

"The PhD was definitely an advantage as I was told after interview that I was easily the best person for the job and I think that was partly because I had a PhD. When that's on your CV, people know that you have studied at the highest level."

(Local Government Researcher)

However, two respondents felt that having a PhD was a disadvantage, one commenting:

"It was possibly a disadvantage. Possibly people might have thought that it was too theoretical. People knew it wasn't all that relevant to my job. I would say it was my experience within the organization and my ability to articulate how we would move forward that got me the job, not the PhD. The PhD enabled me to have the skills."

(IT Strategy Manager, Public sector)

Relevance of skills acquired on PhD programme to current employment

To establish whether there was a fit between skills acquired by highly qualified PhD students and their current employment, respondents were asked whether they did in fact use the skills they had acquired on their PhD programmes in their current employment. All of those in employment said that they did which indicates that the skills they had acquired were both useful and transferable:

"I use the skills through writing reports, which I do a great deal and through making presentations."

(Senior Research Officer, Public sector)

"I use the skills developed on my PhD through researching, writing and articulating arguments on what we should do. This is where the higher order skills I learnt on my PhD come to the fore. I forward plan and translate theoretical ideas about what can be done into practicalities of how the organization can move forward. One of my roles is to collate information about strategic requirements…and to write strategy. This involves researching and interviewing skills…writing it all up and analyzing and synthesizing it into a strategic statement. I also have to present to groups, so the skills in group work and presentation are used on a very regular basis."

(IT Strategy Manager, Public sector)

"I use the skills through almost everything I do. I do a lot of quantitative and secondary data analysis and questionnaire surveys. I also interview…this takes my PhD skills further."

(Local Government Researcher)

Relevance of PhD substantive/discipline knowledge to current employment

Twenty of those employed said that they use the subject knowledge developed in their PhD programme:

"I use the knowledge I've acquired for report writing and to inform other professionals and training."

(Clinical Psychologist, Public sector)

"I use the subject knowledge I acquired during my PhD through the theories and models of personality and intelligence that I learnt which I use every day when working with people in terms of formulating

what I see. This involves observations and then drawing a formulation and understanding what's going on, looking for patterns and influences and behaviours and understanding intervention."

(Clinical Psychologist, Public sector)

Sources of recruitment

Given that twenty-eight of the thirty-one respondents were in employment, we were interested in the routes they had taken to secure employment. These sources of recruitment varied quite broadly, although the main avenues were predominantly through national/local media and internal organisational advertisement. Eleven were recruited through the national/local media; six through internal organizational advertisements; two through websites; two were approached directly whilst employed within the organization; one approached the organisation directly without any prior contact, one was recruited through a recruitment agency, two were headhunted, one gained employment through personal contacts and one through a careers service.

4.6   The value of a PhD

When asked, "Do you believe that your PhD training has improved your ability to get the kind of employment that you wanted?" all but one of respondents answered positively:

I do not believe the PhD helped me to get the job I do now but it has helped me to progress within the organization, mainly due to the skills that I developed in the PhD and the ability to learn quickly. I also find it's easy to become knowledgeable around a subject due to my ability to read and absorb documents quickly."

(Research Intelligence Officer, Public sector)

"It's stood me in good stead. I'm not sure I would still be doing research now if I didn't have it as I wouldn't necessarily be able to get the posts."

(University Research Assistant)

"…because the outcome is that I'll have a PhD which will be a necessity to pursue my career. The PhD involves independent study and you need a greater insight into project management and conceptual decisions. Doing a PhD means you apply your knowledge at another level and the expectations are higher. It is a rigorous process of a high standard, tested at a high level, which is very different to any other research I've ever done."

(University Lecturer)

"…because of the confidence it's given me, my own personal integrity and self confidence. That must come over in any situation."

(Research Manager, public sector, currently not in employment)

"I absolutely believe that my PhD training has improved my ability to get the kind of employment that I want. I wouldn't have this job if I didn't have a PhD. There's also that credibility when you put 'doctor' in front of your name, people automatically take you more seriously and it opens doors for you when you're doing research."

(Local Government Researcher)

Salaries

Salary ranges are analysed separately between those who did and did not complete the on-line questionnaire as the former were asked (and were happy to give) specific salaries, whilst the latter indicated salary ranges on the on-line questionnaire.

Salaries ranged from £16,000 to over £40,000 for the twenty-two respondents who had not taken part in the on-line questionnaire. The lowest salary, at £16,000 per annum, was earned by a Library Assistant in the public sector while the highest salaries were earned by the two managers working in the finance sector: the Client Financial Management Consultant and the Director of

Resourcing in the international financial consultancy. Reflecting the general picture provided in Chapter 3, those who answered the on-line questionnaire were predominantly earning salaries in the £30-40,000 ranges (5), one in the £40-50,000 range and three in the £60,000 plus range. Those in the highest salary range for this group are the Actuarial Tutor, Design and Research Manager and Economist. The lowest salary for this group was earned by the Senior Research Officer employed in the public sector and earning a salary of £30-33,000 per annum. Salaries paid to academics in the study ranged from £22,000 to £27,000 per annum.

Level of satisfaction with current employment

An encouraging number of respondents indicated high satisfaction levels with their current employment, with over half (17) stating that they were 'very satisfied', perhaps indicating that they had moved into areas of employment that were most suitable for a highly qualified social scientist. Just under half (12) also stated that they were 'happy' with their current employment:

> *"Having a PhD has allowed me to become a valuable commodity within the organization and this has enabled me to be able to negotiate projects I do and don't want to work on."*
>
> (Research Intelligence Officer, Public sector)

> *"It's a better path than if I'd stayed at University. I have lots of friends in academia who are on short-term contracts."*
>
> (IT Strategy Manager, Public sector)

> *"I'm in a position where I want to be, doing what I want to do. I'm virtually my own boss and can organize my own research. I also get well paid and it's a permanent job."*
>
> (Local Government Researcher)

> *"I still find my job challenging and it will give me lots of opportunities."*
>
> (Consumer Services Manager, Public sector)

Finally, as a general subjective evaluation, respondents were asked "What did you most value about the time spent studying for a PhD?"…

The responses tended to refer to the intrinsic satisfactions of scholarship, the pleasure of learning, academic fellowship and the skills and knowledge developed, reflecting the picture provided by survey respondents of a population which does not tend to be extrinsically-orientated.

> *"Being able to work independently."*
>
> (Research Intelligence Officer, Private sector)

> *"I most value the time that I had to think and learn…..I have, for life, skills that will make me employable. These are specific skills that make me feel valuable to someone, potentially to organisations."*
>
> (Clinical Psychologist, Public sector)

> *"It's a 'real' subject to me, with an impact on people's lives in the sense that you're advancing something that's worth advancing."*
>
> (IT Strategy Manager, Public sector)

> *"I've made lots of friends. The academic environment was really stimulating, which makes you a much more rounded, educated person and you take that into later life and want to carry on with that educative process, which I've done and am still doing. It also makes you want to give out what you receive and that's why I'm training up a PhD student."*
>
> (Local Government Researcher)

4.7   PhD-holders' evaluations their experiences and career outcomes

The findings in this Chapter explored the perceptions of a small sample of PhD-holders (mainly working in non-academic jobs) about the relationship between research and related skills developed on PhD programmes and their career outcomes.   They indicate that of those interviewed, just under half of respondents reported that they had received reasonably comprehensive training in both qualitative and quantitative research methods that had equipped them for their current occupations. Skills development deficiencies were found in the areas of both qualitative data analysis and quantitative/SPSS training – with evidence that supervisors had colluded in students' resistance to research methods training that they did not see, at the time, as very important in terms of their own project training needs; resistance which, with hindsight, several regretted.   In terms of these skills and the development of broad-based skills development, the accounts of this sample depict standards of PhD training and development that fell   short of the recommendations of the Roberts Report (2002) and highlight the areas in greatest need of more formal programmes of study or greater accessibility to training opportunities.

However, it is interesting that only one respondent identified broad-based skills training deficiencies (presentation skills training). These were not areas in which they expected to have been trained – although several commented that they might, with hindsight, have been useful. This finding is surprising, given that the majority of respondents had received little or no training in this area of skills development. Writing skills were identified as the main skill developed by these highly qualified social scientists during their PhD studies, with all those in employment indicated that they used the skills acquired during their PhD training in their current employment and two-thirds that they used the subject knowledge acquired during their PhD studies in their current employment.   All but one of respondents considered that their PhD training had improved their ability to get the kind of employment they wanted – and this included the apparently under-employed Library Assistant, whose status and pay clearly did not reflect PhD-level employment, but who expressed satisfaction with his job:

> *"I decided to study for a PhD because I liked doing research. I started working on a topic during my undergraduate studies and wanted to continue with this. I found I was good at something and felt this was the way to go and that it was the best way to use my skills."* [PhD in environmental sociology, where he reported acquiring a wide range of research skills and enjoying the process immensely].

> *"I worked as an OU tutor throughout my PhD as well as teaching in the department. This was for both money and career development reasons. I also attended a short teaching training course during the evenings, for career development reasons and also to learn how to teach because this training was not offered in the department or at the OU. I also worked as a Library Assistant in the university library for financial reasons. My PhD was self-funded but I did receive a little financial help from the department. I had a clear idea of the employment options that might be available to me at the beginning of my PhD because I went into it with the intention of being a lecturer. The predominant reason being this was that it would give me the freedom to do research, which I love to do. By the time I submitted my PhD, my aim was still to be a lecturer but you're so busy doing the PhD, particularly towards the end, that you don't have time to think really. I slowly began to re-evaluate my position after I had finished my PhD. I applied for jobs (the OU and Library Assistant jobs, which I'm still doing now) before I had completed. I was happy to have a job that was secure and non-demanding that I actually liked, while doing my PhD.….What I like about my job is the intellectual stimulation and knowing what's going on. There isn't anything I don't like about my job. I earn £16,000 per annum, before tax and do not receive any other benefits. I now have a very clear idea on career progression in the library and recently attended a course that set out a clear structure of how I can progress. I have not experienced any obstacles or barriers to my career development since submitting my PhD…I see my career progressing through taking an MSc in Librarianship. I have already completed a course on chartered librarianship. I would ultimately like to become a subject librarian. This would be my ideal job. I believe that*

ultimately, my PhD training will be useful for me to get the kind of employment I want as a subject librarian…….and becoming an expert in my field."

(Library Assistant, PhD in Sociology)

This is an example, of which we found several, of someone who has moved out of the obvious 'academic' area that their PhD study was originally designed to equip them to enter, but who is doing related work. Library Assistantship does not appear, on the face of it, to be an appropriate job for so well-educated a candidate, but we know from our wider research on the graduate labour market that librarianship has recently become an increasingly credentialised occupational area where a higher degree is becoming a standard entry prerequisite, particularly in the *niche* of university libraries. Similar 'sideways moves' included into university and commercial training:

"The job that I have now is as close to an ideal job as I think is possible to get. After a three year post-doc (also ESRC funded) I was fairly certain I didn't want to continue in an academic career, but found it disheartening to think of having to write off all the knowledge and experience I'd accrued. I am fairly certain that some of my problems in gaining employment were to do with being over-qualified, although it could possibly have been more to do with not having received much instruction in how to articulate skills rather than qualifications."

(Graduate Training Officer in Higher Education, Linguistics PhD)

"The PhD experience convinced me that I was unsuited to an academic career…I joined my present company, where my work consists of producing educational material and teaching small groups of actuarial students throughout the UK and Ireland."

(Actuarial Tutor in Professional Education Services, PhD in Economics)

Some respondents had clearly chosen to study for a social science PhD for career development reasons. Just over half said that they were motivated to study for a PhD because the qualification was essential to their chosen career path and not surprisingly, just over half had a clear idea of what employment options might be available to them when starting their PhD. This idea became even more focused once they had completed their PhDs. One example of this is clinical psychology and the example that follows illustrates the clear fit between PhD research training and employment:

"*After undergraduate studies, I worked as a psychology research assistant for nine months before commencing PhD studies. I decided to study for a PhD because I wanted to practice as a clinical psychologist and this is the only route into practising in the NHS… I used a combination of qualitative and quantitative research methods for my PhD. I sent out questionnaires to a small population whilst on placement in a brain injury team and carried out 8 semi-structured interviews for which I sampled using completed questionnaires. I made use of archive material in the form of patient files and used the internet to cite research. I analysed my quantitative data using SPSS and used a thematic analysis for my qualitative data.*

In hindsight, the main skills I developed during my PhD were: critical thinking, people skills and how to work in a team. The PhD focused very much on practical work and so skills in case management and clinical presentations were very directly related to clinical psychology.

I undertook research methods training during the first year of my PhD, which involved two to three hours once a week in formal classes. The whole range of methods was covered. There were a lot of statistics and participatory methods covered over a wide range of qualitative and quantitative methods training. Training was mainly in skills and techniques. I carried out placement work during my PhD for which I received a salary. My PhD was funded by the Central Services Agency, a government funding body of the NHS. I knew that if I got to the end of the course, I would be guaranteed a job. Therefore, I also had a clear idea about what I wanted to do next when I submitted my PhD."

(PhD in Psychology, Clinical Psychologist in NHS).

The other obvious example is, of course, academic teaching and research, but the route into that was experienced by most of those interviewed as somewhat more problematic, but the example below illustrates how a well-motivated graduate, supported well by her institution and offered appropriate research methods and related professional training, was able to achieve an academic job prior to completing her PhD:

"I decided to study for a PhD because I wanted to be an academic. I returned to studying as a mature student with the intention of studying for a business degree in sales and marketing because I'd worked in a sales and marketing environment for ten years. My plan was to get a good degree and work in the City. However, I discovered that I had a flair and enjoyment for academic work and this was recognised by my OB tutor. I was also gaining ridiculously high grades. Other reasons were that the pay wasn't as bad as I thought it would be, I could stay in [the city where I was studying]*, it would give me the flexibility and autonomy I wanted and there was a fairly well defined career path… My data was analysed using quasi-grounded NVIVO coding. In hindsight, the main skills I developed during my PhD were: the ability to think through an argument more clearly; the ability to accept criticism; and the ability to trust your own instincts in the field. I do believe that the PhD is the best apprenticeship you can have as an academic and I can't imagine how anybody can be an academic without one. It's a rite of passage."*

"I undertook research methods training during the first year of my PhD and this accounted for a few weekends over two semesters, averaging one weekend per month. Classes were formal. The range of methods included a weekend on philosophical approaches and epistemology and a weekend on research planning, such as literature searching and managing the research process, which was less helpful (e.g. using publishers' alerting processes). We also covered statistics. There were no 'how to' methods training classes, it was more about the research process, managing the research and getting published. I undertook three external research methods courses: (1) Writing for Publication, which was run by the Business Education Support Team at Middlesex University, which ran for one day and was funded by my university; (2) Visual Evidence, paid for by the ESRC and held at [another] *university over a weekend; and (3) Actor Network Theory and After, run by* [yet another] *university over a two day period and paid for by my university."*

"Being desperate for money, I taught for four to six hours a week in the department [and did other part-time work including FE teaching]*...for the money and career development. I had a clear idea of the employment options that might be available to me at the beginning of my PhD. I stuck to my big game plan of studying for the PhD for two year's full-time, applying for a lectureship (for which I was successful) and then converting to part-time study in the final year. I knew this would be an option from the outset. This meant that I also had a clear idea about what I wanted to do after submitting my PhD as I wanted to continue with what I was doing.*"

(PhD in Organisation Studies, University Lecturer in Human Resource Management)

One 31 year old female decided on an academic career and has been in continuous employment since completing her PhD in Women's Studies in 2001. She commented:

> *"Obtaining my PhD was one of the best things I have ever done with my life and I could not have done this without an ESRC award. I have chosen to pursue a career as a researcher and have been incredibly fortunate that I have had no lapses in employment and worked either on prestigious projects or in high profile institutions."*
>
> (Research Fellow, Women's Studies/Sociology)

Frustration with the bureaucracy encountered during the course of her third research job after completing her PhD led to her switch institutions with a year to run on her contract, to take a post as research fellow which offered a promotion and the opportunity to work on projects more relevant to her own research interests.

Having completed his PhD in 1999, one respondent felt obliged to accept his first job offer for financial reasons, although is now in an ideal job. He felt he had an advantage over fellow doctoral students in that his PhD was practical and completed quickly, which enabled him to enter the labour market earlier.

> *"I have had a very successful career to date, but it was advantageous that I had an extremely good supervisor and very, very high personal motivation. My PhD was an ESRC Case studentship - I had a collaborating partner which helped in terms of delivering the PhD and in making the PhD practical - really valuable in taking into employment, and completed my PhD in three years, allowing me to enter the labour market at a decent age. Not all my fellow PhD students had these advantages. They have not fared as well in the labour market. Also, I am in the ideal job now, but I had to work for four years immediately after my PhD in a very tough job in consultancy. I took the first job I was offered because I had no choice - there were no other offers at a time of extreme financial penury! You can't walk straight into a dream job after a PhD."*
>
> (Policy Manager, Economic development, regeneration and management)

A very high proportion of respondents were in employment but only a small number (seven) stated that their PhD had been an essential requirement for their current employment, although seven also said that the PhD had been identified as being 'desirable' in the job specification. Almost two-thirds felt that having a PhD was an advantage when applying for jobs. Employees were recruited via several channels, the media and internal organisational advertisements being the most popular means of recruitment. There are large variations in salary levels, with higher salaries being associated with private sector types of employment.

The level of satisfaction with current employment is high, with respondents regarding the PhD as a 'valuable commodity' which has enabled them to negotiate the projects on which they want to work and enabled them to find a speciality in which they wish to remain. On a more subjective level, when asked, what do you most value about the time spent studying for a PhD, some respondents mentioned the ability to work independently, the time they had to think and learn, the acquisition of skills for life that will make them employable and the absolute freedom associated with studying for a PhD. The findings from these more qualitative interviews reinforce those of the online survey reported in the preceding Chapter.

Chapter Five

The fit between postgraduate research skills and employer needs: the employers' perspective

5.1 Introduction

The core of this project has been to investigate the demand for highly-qualified social scientists from employers outside academia – and in addition to identifying *where* social scientists who had recently completed PhDs had found employment, we sought to investigate *why* non-academic employers had recruited such staff. As the findings reported so far indicate, although the majority of those who obtained PhDs aspired to enter and entered employment in academic teaching and research, a significant proportion were employed in other sectors. The previous two Chapters have given considerable insight into the kinds of jobs they were doing, the extent to which they perceived that they were using their postgraduate research training and the skill gaps they had experienced. What of the employers' perspective? There were two key objectives in our non-academic employer investigations: first, to assess the extent to which employers sought social scientists with PhDs and their reasons for doing so and second, to investigate their awareness of the skills and knowledge acquired by postgraduate research students and the potential of these highly-skilled graduates to contribute to organisations outside academia.

From the information provided by members of the 1995 and 1999 graduate samples and the ESRC-funded PhDs who participated in the online survey, we compiled a list of non-graduate employers who had recruited them, identified the managers responsible for graduate recruitment policy and practice, and wrote to them asking if they would be willing to be interviewed about their recruitment of such candidates. We approached over 50 employers directly in this way, plus a further five specialist commercial research agencies who, we were aware, recruited highly-qualified social scientists. We also approached the Association of Graduate Recruiters (AGR) and the Council for Industry and Higher Education (CIHE) both of whom circulated information about the project on our behalf to all their members (Appendix 4). In addition, we held two workshops on graduate employment at a national conference run by the AGR, attended by well over 100 graduate recruiters, and asked participants informally about their recruitment of social scientists with PhDs.

The response to all of these initiatives was interesting. A small number of those approached by letter responded to say that they did not recruit employees with social science PhDs, or that they were unaware of having recruited such candidates, but by far the majority simply did not respond and, when the letter was followed up with a phone call from a member of the research team, gave a similar response. The response from members of the employers' organisations was negligible and informal networking and announcements at the conference revealed, on the whole, polite indifference: organisations in the general graduate labour market do not actively seek social scientists with PhDs, although they sometimes recruit them as part of their graduate recruitment intakes. We discovered, as we had done in the previous investigation nearly ten years ago in 1996 (Elias *et al.* 1997) that, apart from a few particular occupational areas outside academia that might be labelled PhD *niche* occupations - economist research posts in the finance sector and clinical psychologist jobs in the health service and local government – most of the employers who had recruited candidates with PhDs had not sought to do so and regarded possession of a PhD as, at best, a bonus and more often, largely irrelevant. Consequently, we carried out less detailed interviews than planned, but we carried out shorter investigative interviews with a considerably larger number of employers who recruited social science researchers and sought research skills and knowledge – and we did detect some interesting changes since the previous investigation, as will be discussed at the end of this chapter.

5.2 The employer interviews

Most of the account that follows is based on detailed telephone or face-to-face interviews with 16 non-academic employers' representatives who were prepared to talk about their recent recruitment of social science PhD-holders, as follows:

Public sector employment:

JOB TITLE	ORGANISATION
Head of Recruitment and Professional Development	central government service
Head of Recruitment and Promotion	devolved government department
Business Manager for analytical services, responsible for recruiting social researchers	government department
Head of Research	London Borough
Head of Early Years and Childcare	County Council
Graduate Recruitment Manager	parliamentary agency
Graduate Recruitment Manager	environmental agency
Development and Training Manager	environmental agency

Other employment:

JOB TITLE	ORGANISATION
Manager of Talent Search and Partnerships Group	international financial organisation
Graduate Recruitment Director	major international finance consultancy
Research Director	large UK market research organisation
Director	large UK voluntary sector social research agency
Project Manager and Graduate Talent Manager	large 'High Street' bank
Recruitment Manager	PhD entry, international economic agency
Chief Executive	small UK-based international consultancy serving development agencies
Graduate Recruitment Manager	Information and communications services organisation

It is apparent that the finance sector is disproportionately represented here, reflecting the responses received to written and verbal approaches to members of the Association of Graduate Recruiters and the Council for Industry and Higher Education and a wider range of organisations identified as PhD recruiters via the PhD-holders' surveys. These were the managers who agreed to be interviewed and only four of them told us that their organisations actually sought to recruit PhD-holders. The others *had* recruited PhD-holders, and were happy to talk about why – and the implications of that within the context of their current and future recruitment policies and practices.

5.3 The demand for social science PhDs: specialist skills and knowledge

In addition to the 'supply-led' employers and contacts through employers' organisations, we conducted web searches of known graduate recruiters and organisations where advanced research skills were likely to be required. We found two employers who advertised explicitly for candidates with social science PhDs, and these were two of the organisations already identified as recruiters of ESRC-sponsored 1998-2002 PhDs: the Bank of England, seeking economists and the World Bank, seeking a range of social science specialists. We also identified *niche* social science PhD occupations, apart from the most significant ones of academic teacher or researcher, who generally sought to recruit those who had studied psychology or economics. These were for

jobs where highly-specialised skills and knowledge were required, where the PhD was effectively essential professional development for the particular occupations to be filled.

This was often also the case, for employees with these specialisms recruited into other organisations, where it was their particular skills and knowledge, developed in the course of PhD research, that were sought. For example, the UK-based global international organisation, of which 70 per cent of current staff were graduates and 76 had PhDs in economics or related subjects, recruits ten PhDs per year as PhD entrants, and in addition offers around the same number of internships to candidates in the second of third year of their economics PhDs. Every year, the academic contacts of current staff (currently a list of 200 professors) are circulated with information about these vacancies and the recruitment procedures and application deadlines. There are also opportunities for visiting academic placements open to leading economics researchers from all over the world, so that the boundaries between academic and operational research are less distinct that in most of the organisations investigated. The Recruitment Manager interviewed described this well:

> *"We're quite unique in that we* [do work that has a significant socio-economic impact and] *the people can actually come here and still do research, they can publish in their own name, working papers* […]*, but they can also do live conjectural work. So they can turn their research into live operational, hands-on, that will mean something in the real world. We recruit people with PhDs because the work requires it, to be honest. We are* [a leading financial organisation] *so the language is economics, the language...is about doing economic intelligence primarily and feed into the interest rates. [To do our work], we need to do proper research into lots of different areas….. The strength* [of the PhD-holders we recruit] *is they are academics obviously, in terms that they are clearly very well qualified.*
>
> *What I was looking for this year was economists with a background in monetary macro economics, international open economy macro economics, applied econometrics, banking and finance, industrial organisations, applied economics. That was on one side. We were looking for dynamic general equilibrium modelling (particularly about consumption behaviour), monetary transmission mechanisms and open economy, macro economics and finance, monetary strategy, housing market behaviour and/or applied labour economics. On the other side, we were looking for theoretical and/or empirical analysis of banking and financial intermediation, finance, including macro finance and asset pricing, international financial issues, the emerging markets, payment clearing, second systems and/or household behaviour. They are appointed to particular jobs, where we expect them to build on the work they have done for their PhDs."*

Over 90 per cent of this carefully-targeted PhD intake are foreign nationals, reflecting the global labour market for such highly-qualified employees (and for PhD Programmes). This year 152 applicants, of which 38 were female, competed for the ten vacancies and only one UK citizen was appointed, although four had studied for their PhDs at UK universities.

The US-based large global organisation that we had identified as having recruited ESRC-funded PhD-holders, took a very similar approach to recruitment and provided similar feedback – but covered a wider range of social science specialisms: economists and financial analysts, but also social anthropologists, people with poverty expertise, public sector management experts, psychologists, and development analysts from a range of disciplines. The Manager of the Talent Search and Partnerships Group said:

> *"We have a huge area of research [in finance] and development economics. We have another area that has got poverty alleviation and economic management. Usually the people that work in these areas, their degree is PhD and they are the ones that can progress in the institution in the longer run. When we recruit people in these areas that have only a Masters, they don't do as well; they need to diversify their work experience in order to keep progressing. We require a very good behavioural profile, capacity to work with clients and listen and communicate well and engage, facilitate, work across boundaries, work in teams. Usually the technical people were not very skilful on the behaviours and now we are demanding*

that they have to perform. It's not only the 'what' in terms of results and performance, but the 'how they get to them' and that is skills, knowledge and behaviours. So that's what we are doing."

As with psychologists working as clinicians, where a PhD had been required, we found evidence of demand for PhDs that had involved the development of technical expertise and specific practically-orientated knowledge such as specific diagnostic skills relating to recruitment and selection in human resource management, as was discussed in Chapter 4. In the same way, a public sector environmental agency had recruited PhD geographers because of their particular knowledge, technical and analytic skills, but here, it seemed that the PhD was a bonus rather than a requirement. The Development and Training Manager interviewed said:

'In addition to our general graduate recruitment scheme, we have a specialist division where we recruit technical experts for particular vacancies, who often have PhDs – experts in spatial planning, cultural heritage, ecology, environmental sciences – more technical that social sciences, but there is some overlap. I couldn't tell you how many have PhDs - it's not as criterion we use; we recruit against a set of competencies. If they do have a PhD, it's marvellous, but it isn't something we look for. We look for experience and evidence of skills".

Apart from such examples of recruitment of subject-specialists, the majority of employers who had recently recruited newly-qualified PhDs had recruited them as researchers or consultants, on the basis of their research skills and their capacity to conduct research within their organisations. They sometimes required highly-specialist knowledge and skills, and in these cases – like the international finance consultancy – they were more likely to have recruited PhDs – but they generally required successful applicants to have a broad range of research skills.

The Graduate Recruitment Director of an international management consultancy summed up the common response of the larger employers:

"In 2003-4, we had 550 graduate vacancies, for which we received around 20,000 applications. A small proportion of these had PhDs and a handful with PhDs were appointed as part of the general graduate recruitment – because they were graduates who performed well in the selection procedures rather than because they had PhDs. People who have more experience and different experience tend to be able to give better examples and have more relevant things to say [in interviews and assessment centre exercises]. So for example, we have a very competency based approach and if you've had experience across a range of different scenarios, maybe through your PhD or whatever, or through other experiences, then you are going to have more to talk about and more evidence to be able to collect against those competencies. So I think sometimes having a PhD can be advantageous in that sense. But we don't specifically go out and target PhDs…. There are some specialist areas where we could hire PhDs direct and it happens occasionally. They might be in economic modelling, for example. We have some specialist tax areas, like transfer pricing, where you pick up people with PhDs in economics. But mostly it's PhDs who just happen to apply and come in through the normal channel."

5.4   The recruitment of social science PhDs as expert researchers

The development consultancy employs only 19 full-time staff, virtually all of whom are graduate researcher/consultants, four of whom have PhDs in rural sociology, economics and social policy-related areas. The organisation provides Development Aid-related consultancy to British Government departments, to various United Nations organisations, to the World Bank, to the European Commission and to a variety of other bi-lateral aid donors. As a small organisation, they require all-round researchers who are also required to be self-managing ambassadors for the organisation, working collaboratively with others and working autonomously. The Chief Executive saw possession of a PhD as an increasingly important credential in the contexts within which the organisation operates:

"We mostly recruit people probably in their late-20s, let's say, or early/mid-30s...from a strategic perspective, I think if one is trying to work in a global market place, then it's becoming harder, partly because of our higher costs in Britain, to compete with some of the emerging countries, especially, say, India - and I think in a few years to come it will be China as well. There are a lot of people from there who have got PhDs and, in that environment; I think we need people with research degrees in order to compete. So you do need somebody who can conduct methodologically sound studies, draw up a good evidence base and analyse it. Really to find people to do that, generally you need to find somebody who's done a research degree."

We found many employers seeking candidates with higher degrees in relevant subjects, who recruited PhD-holders as part of a less exclusive recruitment process. We were somewhat amused to find the website of a recruitment organisation called PhD Recruitment Ltd, the key information for which is reproduced below:

Ph.D. Search and Selection was established as a high calibre human resources solutions house in the City of London in 1991.

Ph.D. delivers quality senior management to the investment banking, retail banking, insurance and consultancy community. We provide recruitment solutions across all aspects of financial markets, trading on a global basis.

Over the years we have created a substantial network of sources within our space and manage global preferred suppliers' agreements with major Investment and retail banks, insurance companies and Consultancies. We deliver 1st class degree-educated candidates who have the commercial awareness together with the background and knowledge to enhance our clients' reputation and improve the quality of their work force.

We hold a substantial database of exceptional candidates with proven track records. The directors and consultants at Ph.D. are dedicated and committed to delivering our clients goals.

Do I need a Ph.D. to apply?
Whilst about 25% of our candidates have a Ph.D. the majority do not. All candidates wishing to be considered will be assessed on:

- Commercial acumen
- Previous track record &
- Interpersonal skills.

The implication of this advertisement is that a PhD is clearly seen as a proxy for high ability and, as far as this organisation is concerned, a selling point for their wares: high quality contract staff.

5.5   The recruitment of social science PhDs as general researchers

Central government is a major employer of social scientists. Most government research appointments are undertaken as part of the standard 'Fast Track' graduate recruitment programme, looking for general rather than specialist skills although – as in the previous organisation, specialist posts can be advertised directly by departments or agencies and may target specialists who will often have PhDs. The senior Recruitment and Professional Development manager interviewed reported:

"For all social researchers, or should I say' largely social researchers' - some are statisticians but mostly social researchers - we have different grades: we have research officers, senior research officers. The basic entry grade would be a research officer and that would normally be someone with a first degree but more often than not these days someone with a masters too - and that could be in any social science subject and

then the masters with some research methods and then the senior researcher would be the next step up and that would be someone usually with a masters and 2-4 years experience - and then we have principal research officers, that's someone with all of the above with even more experience e- and when you get to that level in the civil service, it's much more important then that you have wider civil servant skills and competencies around management of staff, financial management, project management, that's sort of thing. Appointment to the senior levels is most often through the ranks."

Two examples illustrate this same general requirement for broader skills, supplemented by a small number of 'virtuoso' specialists: the not-for-profit social research agency and the small international development consultancy. The first organisation employs nearly 300 staff, of whom around 100 are researchers and 20 per cent have PhDs. However, most of the latter are in relatively senior positions and many have acquired them prior to gaining experience elsewhere. The organisation carries out a wide range of research for a variety of national and international (mainly but not exclusively public sector) clients, doing research that ranges from large-scale longitudinal surveys to smaller case study work. Both sophisticated quantitative and qualitative skills are required within the organisation.

"We recruit what we call research director. We have a research assistant grade, which is not expected to more than two years in that grade, we then have a researcher grade and normally a person will stay a researcher for two to three years, we then have a senior researcher grade and then someone will normally become a research director and that's the first senior grade really, management grade and they would have the responsibility for individual projects and then we have deputy group heads and group heads and the group head will have anything from five or six researchers to as many as twenty or so... Typically they won't have PhDs although some of them go off to do PhDs and some of them might come back but typically we won't be recruiting people with PhDs or seeking to recruit PhDs - although increasingly we would be looking for a Masters'.

We would expect people with Masters' to be more likely to have some kind of methodological training than people without. Our speciality is methods so somebody simply with a social policy degree; although that's useful, it is not as desirable to us a someone who has a social policy degree and also has some methodological training and will have done a fairly substantial piece of work involving some form of methodological element in it, carrying out a survey or having a taught course in quantitative and qualitative methods. That's more likely to be somebody with a Masters'.

We don't look for people with PhDs, it's a bonus. If someone has a PhD it's an advantage and they'll probably get more money."

The market research organisation Research Director took an identical line:

"The traditional type of person would be someone who is a bit of an all rounder but particularly is interested in quality and making sure they are doing a high quality job with a good eye for detail, good with numbers and get stuck in and not worried about working hard, at the same time they have to have really good persona skills as well and be able to deal and speak with clients in a professional manner. [We do appoint people with PhDs[12]] *but the PhD is almost incidental, you're not recruited because you have a PhD but on the basis of qualities attributes, and academic background and skills* [Pay advantage?] *They would be paid exactly the same to start with..."*

The Head of Corporate Research at a London Borough which had recruited one of the ESRC-funded sociologists had not particularly sought a PhD-holder for the post that had been filled, but *had* sought the research skills possessed by the successful applicant and saw the PhD as a positive indicator.

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[12]   Subsequently, current research staff details were provided, listed according to highest qualification, which revealed that out of 133 relevant staff, 7 had PhDs, 3 had Social Science Research Methods Masters' degrees, 23 had other (mainly Social Sciences) Masters' degrees, 2 had Postgraduate Diplomas in Social Research Methods, 9 had other Postgraduate Diplomas, 75 had Bachelors' degrees (mainly 2.1s in Social Science or Humanities subjects) and 12 had other qualifications such as professional qualifications or sub-degree diplomas.

"I don't necessarily have any views about PhDs or not, I was just looking for someone who had the potential and ability given that there were a limited number of people with the relevant experience. I suppose my thing was if they've done the PhD then perhaps they'll be able to grasp things more quickly and get in to the job quickly...... I may be wrong but my view would be that [people with PhDs] *are highly motivated and they would be bringing that aspect to the job and being able to meet deadlines, do things on their own and learn quickly, compared to Masters where it's still taught classes and they are responding to it. Doing a PhD is very much working your own initiative... that and partly also the ability to know where to get information from if you're working on a research project, bringing the wider contextual information in to it and add value to it."*

He had not been disappointed by the appointment and regarded the appointee as a quick learner who had possessed the necessary research skills and had developed the project management skills required on the job, working well with colleagues. Conversely, the County Council Head of Early Years Research was reluctant to conclude that his appointment of a PhD-holder implied the need for doctoral-level research skills, saying:

"I think that what is more important to the success of the job is that the person has the knowledge base and the skills and the expertise that is required. Now, I guess that probably the more highly qualified somebody is, the more likely they will be to get the right mix of knowledge and skills. But I don't think that means you couldn't find those in a person without a PhD or a Masters'...I think the essence of it is what skills the person has rather than what qualification they have.

There is only one post in the unit that has a requirement for a PhD and that is x's job. At the point that post was created in 2001/2 the requirement on the post was to have a masters degree, but x happened to come along with a PhD and as he developed the work of that team and introduced the post of a research assistant, which is a combined project between ourselves and [a local university]. *The research assistant is conducting a three year project for us and in parallel she is doing that as her PhD, so with x being required to supervise someone doing their PhD, his job was being re-evaluated at the time so we added the requirement of the PhD to it. You need a particular suite of skills to do his job but I wouldn't say you had to have a PhD to do that."*

This nevertheless sounds like a clear case of a PhD-holder 'growing his job', rather in the way that Harvey *et al.* (1996) observed graduates doing in roles that previously had not required degree-qualified applicants.

5.6   The recruitment of social science PhDs - credential inflation?

The preceding examples suggest that the employers, whether or not they actively sought to recruit social science PhD-holders, valued those they had recruited as being able to contribute something extra to the organisations. The picture painted by the Head of Recruitment and Promotion at the devolved government department was of supply rather than demand-led recruitment of PhD-holders, where possession of a PhD was recognised to give a possible advantage to job-applicants in a crowded labour market rather than an advantage to the employer:

"...particularly in terms of jobs like researchers, we are inundated with applications, absolutely inundated with applications ...many of them with PhDs. For the four [research] *posts we had* [recently] *I think it was well over 200 applications, of which probably a third had PhDs. I think it probably gave a slight edge in the selection process. When we got down to the final sift stage, we would have regarded it as being an additional factor, but it certainly wasn't one of the primary things that we were looking for in terms of recruitment into specialist groups.*

While they [the specialist departments we recruit for] *haven't actually specifically specified PhD, it's just we get that many applications from people who have PhDs that we end up taking these people. We've got a large amount of PhD researchers in* [one of the main departments we recruit for],

but we don't specifically put out an advert looking for PhDs, it's a 2.1 or above or a postgraduate degree and a social science. So we don't actually go out and specifically target PhDs per se, it's just that we get so many applications and so many people are so well qualified, that they've come in and interviewed well, they go to the assessment centre and they are offered positions."

The interesting aspect of this case is that, on further probing, it was clear that the PhD-holders appointed were not appointed on the strength of having greater specialist knowledge or technical research skills than the applicants with Masters' degrees or good first degrees – the formal pre-requisite - but on the basis of greater maturity and apparent project-management potential.

5.7 General research and research-related skills sought by employers

The requirement for project-management and excellent interactive skills in applicants for research jobs was a theme that ran though all the employer interviews, whether or not they sought high level skills. When asked what research skills, in particular, the ESRC should be encouraging university departments to develop on PhD programmes, these were mentioned repeatedly. The government department Business Manager responded: *"Probably the same thing as you would hear from most employers, which is more focus on the needs of business and the needs of employers."*

This social and policy awareness was stressed by all those working in commercial research contexts and in the international global finance organisations. The social research not-for-profit organisation Director emphasised the importance of such knowledge throughout his organisation, in addition to the more technical social research skills required for different posts:

> *"The survey and methods people would be looking for somebody with a statistical or methods background.* [In the case of]...*quantitative researchers, we have a much wider field: people have particular interests: but we're looking for people who are quantitative and interested in social policy and research in social policy - we're looking for people who can work in teams, because most of work - it's normally a project of some kind, and there will be a team of a couple of researchers and they will have to work with a team in our operations office. I would have to be honest and say one or two of the people we lose are people who think that what they are going to be doing is sitting at a desk doing analysis and that's a small amount of what we do, mostly what we want are people that design, carry out and analyse.* [People with good interactive skills?] *Absolutely, because all our work is for clients. We do a certain amount of grant-funded work for foundations. We see ourselves sitting in a triangle between a market research company, a government department and an academic research centre. The people that work here have to be able to operate in all three of those worlds."*

When asked about wider skills sought, almost every employer mentioned communication or interactive skills. The US global organisation Talent Search and Partnerships Manager said that the weakness of some of the very highly qualified and analytically-gifted PhD-holders recruited by the organisation tended to be their interpersonal effectiveness and in some instances their strategic capacity.

> *"They have to have a specialty area, but they also have to have a capacity to work across sectors, across boundaries and across different types of teams. So they really have to be very highly effective in their interpersonal skills and they must have leadership skills."*

In this case, the employer saw that some responsibility for developing such skills should be taken in-house, but she considered that PhD programmes should develop some interactive and project management skills. The UK-based global employer reported the same gap:

> *"I think the weakness we've found is the interpersonal skill set. Most PhDs have gone straight through university and they have not been very grounded in the real world in terms of their interpersonal skills. So when it comes to* [the assessment and selection procedures] *sometimes they are not quite as polished as other candidates would be. It's more around their communication. If someone can only talk about their research in an academic way, then how are they going to cope in the working environment*

when 50% of the people that they are working with don't have that level of education? How are they going to relate to others in terms of getting research assistants do their work for them and stuff? They need to be able to relate at all levels and to bring their passion in their research into everyday language. It's that ability to be able to modify their language according to the audience. It's the networking and the team working, that's the type of stuff that often they need developing on."

The Research Director of one of the biggest 'household name' market research organisation appeared unaware of changes in postgraduate research training in universities and believed that the organisation preferred, on balance, to recruit graduates with a good first degree and carry out research management and presentation skills training in-house (despite the fact that out of 100 researchers in the London office, 40-50 had Masters' degrees and 5 or 6 had PhDs at the time of the interview). He said:

"There is a huge amount of training and the graduate training is now split in two parts because we used to have a block of two or three weeks where they would learn everything; so what we do now is have a couple of weeks training and learn the core skills, set objectives and complete the training six months later with another weeks training…. If [the standards of research-related skills on postgraduate degree courses] *changed we may not have to go through certain training. I know we would be slightly wary about it because. My old boss he had long graduated and been in other areas of business but he still had to be a trainee. There is still this element that we would put people through training courses but as I say, it depends. If the* [Masters' or doctoral]*course can convince us they are qualified, as it were, and are of the same calibre as a research executive who's been working for two years, then I think it would be interesting to see where you'd get these people in."*

5.8 Research skills shortages reported by employers

The requirement for project-management and excellent interactive skills in applicants for research jobs was a theme that ran though all the employer interviews, whether or not they sought PhD-holders. The other areas of skills shortage mentioned by several of those interviewed, across the employer spectrum, were quantitative research and statistical skills. The Director of the social research organisation said:

"We have serious difficulties recruiting statisticians. We have some difficulty recruiting people who are interested in survey methods at the junior level, though we don't have a great deal of difficulty in recruiting otherwise. We have more difficulty recruiting at the research director and above. We get very good entry job applicants and usually when we're asking for three or four years experience. But seven or eight year's experience, by that time - people are either in market research or they're into academic careers. Often after seven or eight years [PhD-holders] *are not temperamentally suited to working here because of the nature of the work here which is more time limited. It would nice to get people who have more quantitative methods experience before they came to us - and knowledge of statistical analysis and to have people with more practical experience of doing large-scale research."*

The local authority research managers also both mentioned difficulties in recruiting researchers with good quantitative research skills. *"There is a need for and more quantitative social researchers"*, said the County Council Manager, *"There seem to more psychologists around looking for jobs rather than sociologists."*

The Chief Executive of the small development agency also complained about poorly-developed quantitative skills and understanding:

"Nobody knows any quantitative analysis any more. That seems to have died out in the '70s or something! Generally speaking, people are not as numerate as they should be. Even people who have done research degrees and have had to do statistical analysis don't really seem to have a sound grasp of basic principles of sampling and of statistical analysis of sample data and really quantitative analysis of data. I think it's quite an interesting thing…but I sort of remember that you couldn't have done a social

science degree back in the '60s or '70s without having had to do good quantitative methods training. But more and more we seem to get people who really don't have a very good grounding in that.

We don't actually have to do an awful lot of that ourselves and in fact if we were commissioned to do a work with a very heavy survey component, I would probably hire in a professional statistician. But you often need to understand limitations of other people's data and understand analysis that's been done and I think by and large that that is actually quite a weakness now."

5.8   Future projections

The 'virtuoso specialist analyst' organisations expect to continue to recruit PhD-holders, in an increasingly global market. The research agencies – social, consultancy and market research organisations – were either aware of, or supportive of, improved research methods training in higher education, or unaware but intrigued by it. The social research voluntary sector Director said:

"We would be attracted by people who have done a masters that is more applied because, as I said, a lot of our work is very practical and knowing about data protection and ethics and all that sort of stuff would be very useful for anybody working here."

Similarly, the central government Research Manager saw research degrees as increasingly valued:

"If somebody said "I've done this interesting research..." that can be a plus, if they demonstrate that they have research and analytic skills, but that wouldn't be the whole story. We look for these in our general graduate recruitment scheme too, they're becoming increasingly important to us…Masters' degrees are perhaps becoming more important."

The Manager in the devolved government department agreed:

"We recruited directly to specialist groups and specialist groups within the Executive, including people like economists, statisticians, researchers, press officers and lawyers and so on. To those groups, often (almost always) we would be looking for a degree in the appropriate specialism. What we are doing now is moving away from that model, so we're moving away from the generalist model where we've bought in large numbers to do generic policy type roles, we're moving much more towards a post-specific approach and it will be interesting to see, once that beds in, to see whether that has any impact in terms of what line managers are looking for when they are seeking to fill vacancies, i.e. are they looking specifically to target graduates or people with higher level qualifications from that?"

The 'Fast Track' central government recruiter had indicted that candidates with research methods masters' degrees had been increasingly impressive and she reported that:

"Departments have definitely become more intelligent about [the value of research skills] and [have been developing] links with universities where it's considered the masters courses are particularly good and providing the type of output we need in government."

Several respondents commented on the stereotype of PhD-holder as narrowly specialist and their preference for researchers who are able to work flexibly between quantitative and qualitative work, as well as possess good interpersonal, negotiation and presentation skills. The small consultancy Director, summing up his message to the ESRC, said:

"One thing that strikes me is that I think we are increasingly keen on advanced training that is broad-based and doesn't allow someone just to focus on terribly narrow areas and doesn't develop their whole knowledge across [the broad issues covered by their discipline and its research

methodologies] *as a whole. Then the second area, I've already mentioned, the quantitative analysis: I think that's really terribly important."*

Thus we see, from the employer interviews, evidence of demand for both specialist and wider research skills, and research-related skills such as are included under the headings advocated by Roberts and now included in the Research Council's research degree programme requirements. However, it seems that the message that social science PhD programmes have been becoming increasingly rigorous and wide-ranging, to incorporate professional research training and development in addition to discipline specific methodological and analytic skills development, has not yet got through to the majority of non-academic employers who currently recruit social science PhD graduates, by intent or default. This is an important finding that needs to be addressed.

Chapter Six

Making sense of the evidence

1.1   Overview

'Research degree graduates are key to developing the UK as an innovative knowledge economy. With the increasing sophistication of research and other activity in higher education, the public sector and industry, successful leadership demands the specialised knowledge and wider skills gained by research degree students in a wide variety of disciplines. As the UK continues to invest more heavily in research and development, towards a European Union target of 3 per cent of GDP by 2010, we may expect the demand for these skills to rise still further.'

(Joint Funding Councils 2003:3).

Previous research has indicated that the majority of social scientists who complete PhDs did so with a view to entering academic careers and it remains the case that the majority continue to see PhD study as the opportunity to develop increasingly specialist skills and knowledge, and to expect that a social science PhD will lead to teaching or research careers in higher education. However, a significant minority has always found employment outside academia. Our brief was to investigate the demand for highly-qualified social scientists – specifically those who had completed PhDs – from outside academia, and to establish the fit between the skills developed on PhD programmes and the skill needs of the employers who seek highly-qualified social scientists.

The survey analyses indicated that most of those in academic jobs had been required by their employer to have a PhD, but this was not the case for the majority of those in non-academic jobs – although many respondents saw it as having given them an advantage in seeking employment. We found a wide range of non-academic jobs being done by those with social science PhDs on a spectrum upon which, at one end, the particular discipline-based knowledge and research skills developed on PhD programmes were clearly required and used, and at the other, a PhD had not been a pre-requisite and the PhD-holders were not obviously using their research skills at post-doctoral level. In the middle, there were those that required the general research and related skills developed on PhD programmes, where possession of a PhD had clearly provided an advantage to the holder in accessing a job. To illustrate this spectrum, we provide some examples of the current occupations of ESRC-funded PhD graduates who completed their degrees between 1998 and 2002, identifying in brackets the discipline area in which they studied as postgraduates:

- Clinical Psychologists (psychology)
- Design Research Manager, Europe, ICT company (anthropology)
- Principal Clinical Safety Scientist (Biopsychology)
- Principal Researcher, government (sociology)
- Political officer, international lobbying organisation (International relations)
- Economists: IMF, Bank of England, World Bank (economics)
- Head of Policy and Research, QUANGO (urban planning and conservation)
- Parliamentary Private Secretary, House of Commons (politics)
- Policy Manager, Planning, regional authority (town and regional planning)
- Doctrine Manager, central police agency (law)
- Senior Researcher, UK mental health charity (psychology)
- Specialist Caseworker, Citizen's Advice Bureau (linguistics)
- Consultant on international development and training specialist SME (development studies)

6.2   The fit between research training and development and employment: the PhD-holders' perspective

Most of the non-academic jobs held had a research or research management component and it is clear from the job titles and from the details provided in the ESRC-funded PhD graduates' questionnaires that that they used and provided opportunities to develop the postgraduate skills and the general, if not discipline-specific, research knowledge acquired.   There is little evidence of under-employment or dissatisfaction with career outcomes among those employed outside academia: indeed, as discussed in Chapter 3, it was those who had remained in academia who expressed most dissatisfaction with their employment prospects and conditions of employment. Two points need to be made here, however: those who had been awarded ESRC postgraduate studentships most often had studied in *elite* universities with an established research ethos. This does not mean that they had invariably had positive experiences as far as research training and development were concerned, but it does mean that they may have found opportunities in both academia and with non-academic employers more easily accessible than less privileged PhD-holders.

Secondly, they mostly completed their PhD study before the implementation of recommendations arising from the Roberts Review.   This means that the training and development gaps they identified are likely to have been subsequently rectified in many departments. However, they highlight weaknesses that required to be addressed and it may take some time for the required revisions to PhD programmes to be fully implemented and raise interesting questions about the research training and development required by social science PhD students. In addition, particularly in the case of those who have moved into employment outside academia, they are indicative of the research and related skills demanded by employers of highly-qualified social scientists.

We found, both in the 1995 and 1999 follow-up interviews and in the ESRC-funded PhD-holders' survey, that there was very wide diversity in research training and, even more, in research management skills – ranging from excellent to negligible; and this did not correlate with the status of the academic context. It would be invidious to cite particular illustration of this, but departments in the most *elite* universities were among the most heavily criticised by their PhD-holding *alumni*, while one of the most positive reports about training and development was provided by a graduate who had studied for her PhD part-time at a new university.   The key points made repeatedly by graduates were as follows:

- Regret that skills-set was narrow and supervisors had sometimes colluded in enabling them to avoid wider research training.
- Frequent mention of inadequate training in quantitative methods and in analysis of *qualitative* data.

Conversely, concern was expressed by a minority that the current stress on formal development of research skills may be inappropriate in some cases, and effective than the traditional 'apprenticeship' approach.

However, a significant proportion complained of lack of training in the related skills that the Research Councils now advocate, particularly lack of research management skills, lack of career management skills and information, and lack of guidance and encouragement to publish during PhD programme. However, (in most cases) PhD-holders expressed the belief that possession of a PhD had enabled them to develop skills and knowledge used in their current employment, whether or not it was in academia, and had given them a distinct career advantage.

Short courses run for PhD students at particular stages of the PhD process were evaluated as having been particularly useful.

> *"The CRAC careers course I went on towards the end of my PhD, sponsored by the ESRC, was helpful, although more oriented towards science PhDs than other disciplines. I was very fortunate in being offered a post-doctoral fellowship prior to the completion of my PhD. However, I would have benefited greatly from careers guidance aimed at doctoral students. Once I had decided to look for work outside my academic discipline, it became difficult. My lack of* [non-academic]*work experience was a disadvantage."*

(Female, Senior Research Administrator, Sociolinguistics)

As that quote illustrates, the 'grievances' expressed by PhD-holders were essentially that their research training and development had fallen short of equipping them adequately for the professional careers that they aspired to – and these divided between those who felt they had been sold short on preparation for a traditional academic career – who complained about lack of preparation for publication, applying for research funding or teaching; those who had entered a research career and felt that the comprehensiveness of their research methods training and research-related entrepreneurial skills could have been better; and those who had wished to leave academia and felt that their training had been too much geared to preparation for an academic career. These differences may be inevitable, but could suggest that beyond the development of basic research methods and research management literacy, a range of alternative research training options for PhD students to equip them to progress in their chosen career direction could meet their needs better than a 'one size fits all' approach.

For those pursuing academic careers, ESRC Postdoctoral Fellowships were welcomed as an increasingly valuable opportunity to enable them to make the difficult transition from student to credible academic, particularly in an academic climate where the RAE dissuades higher education institutions from recruiting staff who have not already accrued sufficient publications to be submitted as research active.

6.3   Key issues raised by employers

Demand for specific PhDs appears to be limited to very few employers, and for a narrow range of specialist occupations (with mainly economics and psychology PhDs mentioned as specialisms sought). These employers had very particular requirements and generally, were well aware of the research training and development provided on particular PhD programmes. It was clear from their accounts of recruitment and selection that the majority of employers who had recently recruited newly-qualified social science PhD-holders had done so without setting out to recruit PhD-holders, but these ranged from employers who required highly-skilled social scientists to those who simply required employees with skills that equipped them to fulfil roles within their organisations which might or might not include conducting, evaluating or interpreting research. Such employers looked for evidence of *skills and experience* rather than formal qualifications. Possession of a PhD had been taken as a proxy for good problem-solving and research management skills (but this also applied to some Masters' degrees, and several employers in this category were suspicious of PhD-holders, who they suspected might be over-qualified or over-specialised).

The employer interviews nevertheless indicated that possession of a social science PhD gives job applicants an advantage *if* they also have good interactive and project-management skills. Asked what skills the ESRC should be particularly concerned to promote the development of, quantitative and statistical research skills were in demand by employers who positively sought PhD job applicants and mentioned by others as skill shortages. Communication skills, project management and 'business awareness' were also frequently mentioned by the full range of employers interviewed.

6.4   Implications of the findings

The majority of social science PhDs aspired to and had succeeded in obtaining teaching and research jobs in academia, but there were high levels of dissatisfaction with certain aspects of these jobs, and with the difficulty of the moving from PhD-student to researcher or lecturer in higher education. Those who had managed to do so mentioned low starting salaries, employment insecurity, stressful pressures to balance teaching and/or research and publishing; and those in higher education were substantially more likely to be on fixed term contracts than those employed in other sectors. Although we did not have a brief to investigate this particular transition, the extent to which social science PhD-holders reported dissatisfaction with academic opportunities and disillusion with what had been their chosen career path strikes us as an issue to give the ESRC and all higher education stakeholders pause for thought. The attitudinal evidence for the surveys, including the survey of 1998-2002 ESRC-funded PhD graduates, makes it clear that the graduates did not embark upon their pursuit of academic careers with illusions or high expectations, as far as earnings or employment security were concerned, but it is disconcerting to find that their evaluation of their current employment, on almost every dimension, fell short of that of their peers who had obtained employment outside academia.

The findings from the employers and the PhD-holders indicate that there is manifest demand from employers outside academia for PhDs in certain social science subjects, particularly economics and psychology, and latent demand for high level social science research skills more broadly. The experience of the graduates surveyed and interviewed, along with the labour force survey evidence, shows that there is already significant knowledge transfer between academic social science and both the private and public sectors through the employment of PhDs in non-academic jobs, with scope for further development. However, the evidence from employers we spoke to, via the employers' organisations and even among those who had recently recruited social science PhDs, suggests that many are unaware of the skills developed on social science PhD programmes and are the majority are unaware of recent Research Council and QAA initiatives to improve the professional development of social science research students. It was also clear that many of the PhD graduates we interviewed were unaware of, and ill-prepared to seek, employment opportunities outside academia. These findings, along with the unexpected finding that experience of employment in higher education for social science PhD-holders had created disillusion among a significant proportion of those who had initially aspired to it, and shows signs of further haemorrhaging of 'new blood' from the academic social science profession, is a cause for concern. For the next few years at least, UK higher education expansion is projected to continue, while the demographic profile of social science academics is skewed towards the pre-retirement age groups.   There is a need for further development, and recognition of, the potential for high level social science skills to contribute to innovation and competitiveness both within and beyond academia – among social science PhD students and graduates and employers.

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Appendix One
Online Questionnaire

Career Outcomes of ESRC-funded PhD Social Science Students 1998-2002

This survey covers two main areas: your PhD and the skills you acquired as a postgraduate research student and your current employment situation.

The information you provide will be treated in strictest confidence, in conformity with the requirements of the Data Protection Act 1998. No information about individuals will be passed to any third party.

IMPORTANT: If you wish to change an answer you have given as you go through the questionnaire, you are able to move backwards and forwards using the BACK and NEXT buttons at the foot of each page. PLEASE DO NOT USE THE BACK AND FORWARD BUTTONS ON YOUR BROWSER.

If you have any queries in the course of completing the questionnaire, please contact Stella Warren at the University of the West of England, Employment Studies Research Unit (Tel: 0117 328 3734, Email: stella.warren@uwe.ac.uk)

Some questions about your PhD

Q1   Which year did you register for your PhD?
- [ ] 1990
- [ ] 1991
- [ ] 1992
- [ ] 1993
- [ ] 1994
- [ ] 1995
- [ ] 1996
- [ ] 1997
- [ ] 1998
- [ ] 1999
- [ ] 2000
- [ ] 2001
- [ ] 2002

Q4   Which month did you register for your PhD?
- [ ] January
- [ ] February
- [ ] March
- [ ] April
- [ ] May
- [ ] June
- [ ] July
- [ ] August
- [ ] September
- [ ] October
- [ ] November
- [ ] December

Q2   Why did you study for a PhD? (Please *mark all that apply*)

- [ ] I was interested in an academic career
- [ ] I wanted to carry out an in-depth study of a particular topic
- [ ] I thought it would improve my career prospects generally
- [ ] I was awarded a funded studentship
- [ ] I was encouraged to do so by staff who had taught me as an undergraduate
- [ ] It was essential in order to enter the area of employment in which I wanted to work
- [ ] Other (you will be prompted to provide details if you check this box)

Please give details about other reasons for wanting to study for a PhD

Current Situation

Please state the nature of your MAIN activity.
In cases where you are engaged in more than one career activity, you should decide which you regard as the main one.

Q3   Which of the following describe your current situation:

- [ ] In full time employment related to my long-term career plans
- [ ] In part time employment related to my long-term career plans
- [ ] In full time employment (other)
- [ ] In part time employment (other)
- [ ] Self-employed
- [ ] Unemployed and seeking work
- [ ] Out of the labour force/not seeking work

If employed or self-employed

Q5   Name of employer

Q6   Employer's main product or service

Q7 Size of organisation

☐ Small (under 25 employees)
☐ Medium (25-249 employees)
☐ Large (250-999 employees)
☐ Very large (1000+ employees)

Q8 What is the contractual basis of your current job?

☐ Permanent or open-ended contract
☐ Fixed term contract
☐ Probationary period prior to confirmation
☐ Self-employed
☐ Temporary, through an agency
☐ Other temporary or casual
☐ Other

Q9 What is your job title?

_____

Q13

Brief description of the main tasks in your job

_____

Q10

Why did you decide to take your current job? (*Please mark all that apply*)

☐ It was exactly the type of work I wanted

☐ I wanted to work for this employer

☐ I was already working/had previously worked for this employer

☐ The salary level was attractive

☐ Other conditions of employment were attractive

☐ I wanted to work in this locality/region

☐ It offered interesting work

☐ It offered the chance for me to use the skills I had acquired during my PhD studies

☐ It offered the chance to learn new skills

☐ I thought it would lead to opportunities for promotion/career development

☐ To gain experience in order to obtain the type of job I really wanted

☐ It offered job security

☐ I need to earn money and this was the best/only available option

☐ It offered a good work/life balance

☐ Other (you will be prompted to provide details if you check this box)

Please give details of other reasons which helped you to decide to take your current job

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Q11

How did you hear about your current job?

☐ Media advertisement (*e.g. local/national press, Internet*)

☐ Employer's website

☐ Recruitment agency/website

☐ I was headhunted

☐ It was advertised internally in the organisation in which I worked/studied

☐ Personal contacts, including family and friends

☐ I approached the organisation directly

☐ Careers service

☐ Other (you will be prompted to provide details if you check this box)

Please give details of how you heard about your current job

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Q12   Were the following relevant in enabling you to obtain this job? (*Please mark all that apply*)

☐ Your PhD qualification
☐ The PhD subject you studied
☐ The university at which you studied
☐ The skills you developed as a PhD student
☐ The contacts you made as a PhD student
☐ Employment experience/training in this organisation in another job
☐ Employment experience/training in another organisation
☐ Other (you will be prompted to provide details if you check this box)

Please give details of other factors which enabled you to obtain this job

Q14

Which aspect of your qualification, if any, was your employer most interested in?

☐ Subject studied
☐ Level of qualification
☐ Both
☐ None

Q15

Please examine the research skills listed below and indicate whether: (a) you received *formal* training in them as part of your PhD course, (b) you developed these skills in the process of doing your PhD, and (c) they are required in your current job. (*please mark all that apply*)

	(a) trained	(b) developed	(c) required
Formulation of research problems	☐	☐	☐
Understanding/applying a range of methods and tools	☐	☐	☐
Using large scale datasets	☐	☐	☐
Collection of qualitative data	☐	☐	☐
Collection of quantitative data	☐	☐	☐
Interpretation and presentation of qualitative data	☐	☐	☐
Interpretation and presentation of quantitative data	☐	☐	☐
Development of theoretical concepts	☐	☐	☐
Development of critical thinking skills	☐	☐	☐
Identification of own training needs	☐	☐	☐

Q16

Please examine the **general research/transferable skill categories** listed below and indicate whether: **(a)** you received *formal* training in them as part of your PhD course, **(b)** you developed these skills in the process of doing your PhD, and **(c)** they are required in your current job. (*please mark all that apply*)

	(a) trained	(b) developed	(c) required
Use of bibliographic sources and methods	☐	☐	☐
Basic computing *(e.g. email; processing, spreadsheets, etc.)*	☐	☐	☐
Advanced computing *(e.g. use of specialised data analysis software packages)*	☐	☐	☐
Foreign language skills	☐	☐	☐
Written communication skills *(e.g. ability to summarise, recount and report to a variety of audiences)*	☐	☐	☐
Verbal communication skills	☐	☐	☐
Teaching skills	☐	☐	☐
Numeracy skills *(e.g. working with statistics; financial understanding in terms of being able to understand and control income and expenditure)*	☐	☐	☐
Management of projects and resources	☐	☐	☐
Leadership skills *(e.g leading, influencing and encouraging others towards the achievement of shared goals)*	☐	☐	☐

Q17

Please examine the **research management and team working skill categories** listed below and indicate whether: (a) you received *formal* training in them as part of your PhD course, (b) you developed these skills in the process of doing your PhD, and (c) they are required in your current job. (*please mark all that apply*)

	(a) trained	(b) developed	(c) required
Decision making	❏	❏	❏
Time/resource management	❏	❏	❏
Quality management	❏	❏	❏
Teamworking	❏	❏	❏
Interpersonal skills	❏	❏	❏
Information management	❏	❏	❏
Research ethics	❏	❏	❏
Knowledge of intellectual property rights	❏	❏	❏
Dissemination and exploitation of research outcomes	❏	❏	❏

Q18

Please examine the **personal and career development skill categories** listed below and indicate whether: (a) you received *formal* training in them as part of your PhD course, (b) you developed these skills in the process of doing your PhD, and (c) they are required in your current job. (*please mark all that apply*)

	(a) trained	(b) developed	(c) required
Career planning	❏	❏	❏
Identifying opportunities for employment	❏	❏	❏
Identification of research funding opportunities	❏	❏	❏
Networking	❏	❏	❏
Self-promotion/marketing	❏	❏	❏

Q19

To get this job, was your PhD ...?

- ☐ Essential
- ☐ An advantage
- ☐ Not significant

Q20

Do you use the subject/discipline knowledge you acquired during your PhD in your job?

- ☐ Yes
- ☐ No

Q21

How useful overall has your research training been in relation to your employment?

- ☐ Very useful
- ☐ Quite useful
- ☐ Not very useful
- ☐ Not at all useful

Q22

How satisfied do you feel with the following aspects of your job?
(Please rate them on a scale of 1-7 where 1 means not satisfied at all and 7 means completely satisfied)

	not satisfied at all	2	3	4	5	6	completely satisfied
Promotion	☐	☐	☐	☐	☐	☐	☐
The actual work itself	☐	☐	☐	☐	☐	☐	☐
Relations with your supervisor/manager	☐	☐	☐	☐	☐	☐	☐
Relations with your peer group	☐	☐	☐	☐	☐	☐	☐
Job security	☐	☐	☐	☐	☐	☐	☐
Opportunity to use your own initiative	☐	☐	☐	☐	☐	☐	☐
The number of hours you work	☐	☐	☐	☐	☐	☐	☐
Available resources to do the job	☐	☐	☐	☐	☐	☐	☐
Flexible working arrangements	☐	☐	☐	☐	☐	☐	☐
Working conditions	☐	☐	☐	☐	☐	☐	☐
The opportunity to learn new skills	☐	☐	☐	☐	☐	☐	☐
The opportunity to contribute ideas	☐	☐	☐	☐	☐	☐	☐

Q23

Using the same 1-7 scale

All things considered, how satisfied are you with your present job overall?

Using the same 1-7 scaleAll things considered, how satisf...	Not satisfied at all	2	3	4	5	6	Completely satisfied
	☐	☐	☐	☐	☐	☐	☐

Q24

On a similar 1-7 scale, where 1 means very inappropriate and 7 means ideal

How appropriate do you think your current job is for someone with your qualifications?

On a similar 1-7 scale, where 1 means very inappropriate...	Very inappropriate ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	Ideal ☐

Q25

What is your gross annual pay in your current job? *(include any overtime, bonuses, commissions, tips or tax refunds, before deductions for tax, national insurance or pension contributions, etc.)*

☐ Less than £9,999
☐ £10,000-11,999
☐ £12,000-14,999
☐ £15,000-17,999
☐ £18,000-20,999
☐ £21,000-23,999
☐ £24,000-26,999

☐ £27,000-29,999
☐ £30,000-32,999
☐ £33,000-35,999
☐ £36,000-39,999
☐ £40,000-49,999
☐ £50,000-59,999
☐ £60,000 and over

Q26

Do you receive any of the following benefits as part of your reward package? *(Please mark all that apply)*

☐ Company car
☐ Private healthcare

☐ Non-contributory pension
☐ Company discount

Other (*Please specify*)

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Q27

Have you experienced difficulty in obtaining employment since completing your PhD?

☐ Yes
☐ No

Q28

Why do you think you experienced difficulty? *(please mark all that apply)*

☐ No suitable job vacancies
☐ I was applying for jobs in a very competitive market

☐ I lacked work experience
☐ Employers thought I was over-qualified
☐ Employers thought I was too specialist

Other (*Please specify*)

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Q29 Did you do any of the following prior to completing your PhD? *(please mark all that apply)*

☐ Part time teaching in the university where you were registered

☐ Part time work undertaken solely to earn money

☐ Part time research assistant in the university where you were registered

☐ Temporary full time university teaching post

☐ Other part time research

☐ Temporary full time research post

☐ Other career-related part time work

☐ Other career-related temporary work

Other *(Please specify)*

Personal Details

This final section of the questionnaire deals with aspects of your personal characteristics that may be relevant to your experience of job hunting and career development

Q30 Your age

Q31 I am...

☐ Male

☐ Female

Q32 Do any of the following affect your ability to take up a job or to change your job? *(please mark all that apply)*

☐ Family commitments

☐ Partner's career

☐ Disability or long term illness

Other *(Please specify)*

Q33   In which of the following households do you currently live?

☐ Alone

☐ In joint household with spouse or partner

☐ In joint household with spouse or partner and child(ren)

☐ As a single parent, with my children

☐ In family home with parents and/or siblings

☐ In shared accommodation with other adult(s)

Other (PLEASE SPECIFY)

Please set out below your educational history, starting with your undergraduate qualification

Q34   Type of qualification *(e.g. BA (Hons))*

Q35   Subject/Discipline *(e.g. Social Policy)*

Q36   Class of Award *(e.g. 2.1)*

Q37   Institution

Details of Postgraduate qualification *(other than PhD)*

Q38   Type of qualification

Q39   Subject/Discipline

Q40   Institution

Details of PhD

Q41

From which university did you gain your PhD?

Q42   What was the subject/discipline of your PhD?

Q43   When was your PhD awarded?
- ☐ 1990
- ☐ 1991
- ☐ 1992
- ☐ 1993
- ☐ 1994
- ☐ 1995
- ☐ 1996
- ☐ 1997
- ☐ 1998
- ☐ 1999
- ☐ 2000
- ☐ 2001
- ☐ 2002

Q44   Which month did you register for your PhD?
- ☐ January
- ☐ February
- ☐ March
- ☐ April
- ☐ May
- ☐ June
- ☐ July
- ☐ August
- ☐ September
- ☐ October
- ☐ November
- ☐ December

Q45   Please Indicate the region where you lived Immediately prior to starting your higher education, the region where you were first employed after submitting your PhD and the region In which you are currently employed. (*Please tick **one** box In each column*)

	Where lived Immediately prior to starting your higher education	Where first employed after submitting PhD	Where currently employed (main place of work)
Inner London	☐	☐	☐
Outer London	☐	☐	☐
South East	☐	☐	☐
South West	☐	☐	☐
Wales	☐	☐	☐
East Anglia	☐	☐	☐
East Midlands	☐	☐	☐
West Midlands	☐	☐	☐
North West	☐	☐	☐
Yorkshire & Humberside	☐	☐	☐
North	☐	☐	☐
Scotland	☐	☐	☐
Northern Ireland	☐	☐	☐
Irish Republic	☐	☐	☐
Outside British Isles	☐	☐	☐

Q46

Which group best describes your ethnic origin or descent

☐ Indian
☐ Pakistani
☐ Bangladeshi
☐ Chinese
☐ Black Caribbean
☐ Black African
☐ Black (other)
☐ Asian (other)
☐ White
☐ Other ethnic group

Please specify   _____

Q47

We will be very interested in any further comments that you wish to make about your experience as a PhD student, your transition to the labour market, further training, your career development and any future plans and aspirations.

Thank you for taking the time to complete this questionnaire.

Your responses will be treated in strictest confidence and your details will not be passed to any third party

We may wish to carry out a number of telephone interviews with respondents to follow up particular experiences and career choices in greater details. If you are happy for us to contact you, please provide details below.

Q48   I am willing to be interviewed by telephone *(Please supply your details)*

☐ Yes
☐ No

Q49   Name

Q50   Telephone/Mobile Number

Q51   Email Address

Q52   Postal Address

Q53   I would like to be entered for the prize draw of a £100 gift voucher (*Please supply your email address if you have not already done so*)

☐ Yes
☐ No

Appendix Two
95/99 Interview Schedule

The Choices, Options and Recruitment of Social Science PhD Students

Telephone Interview Schedule (1995 cohort version)

Interview Number: **Ref.:** {e.g. SYO   }

Date and time of Interview:

Interviewee Name: **m/f**

Age:

Introduction

I'm Susan Durbin from the University of the West of England. I arranged to call to interview you as part of the project we are conducting on the employment of social science PhD students. Thank you for agreeing to take part. The interview will take around half an hour. Our interest is in obtaining an overall picture of your experience as a PhD student, your current employment situation and career development since submitting your PhD.

I hope that this is still a suitable time to talk to you? Before we start, I'd like to stress that the information you provide will be treated in confidence. Nothing you say will be passed to a third party or cited in a way that enables you or your university to be identified.

Is it OK if I record the interview? This makes it easier to have a conversation and to make sure that I don't miss anything. The recording will be used only to make writing up easier and will not be accessible to anyone outside the research team.

First, can I just check…
You undertook a PhD programme in [Year ………………] **at**
[HEI …………………………………..] **in** [SUBJECT ACCORDING TO
DEPARTMENT/FACULTY………………………………………………………] – **Is
this correct?**

When did you first register as a PhD student? [month/year]
When did you (or do you plan to?) submit your thesis? [month/year]
When was the PhD awarded? [month/year]

---

1. Did you move straight on to a PhD after completing your undergraduate degree, or did you do a taught Master's course first, or did you spend time in employment?
[IF EMPLOYED: **What was your last job/situation just before starting you PhD**]?

This interview basically covers two areas: your experience as a PhD student and your career since completing your thesis. First, I'd like to start by asking a few questions about your PhD….

2. My first question is why did you decide to do a PhD? [RECORD RESPONSE IN FULL]

3. What was the topic of your thesis?

4. What research methods did you use? [ASK OPEN-ENDED, RECORD COMMENTS, AND TICK OPTIONS BELOW, PROBING FOR INFORMATION ABOUT SCALE, SCOPE AND COMPLEXITY OF RESEARCH UNDERTAKEN]

Analysis of existing data

     Archive material

     Large-scale statistical datasets

     Use of Internet for research

     Other

Self-completion survey [POPULATION/SAMPLE - HOW MANY?]

Interviews [POPULATION/SAMPLE - HOW MANY?]

     structured, semi-structured, unstructured?
     individual, group?

Focus groups [POPULATION/SAMPLE - HOW MANY?]

Case studies [WHICH, WHY, HOW MANY..?]

Observation (participant /non-particpant) [WHO, WHAT, WHY?]

Experimental work (e.g. 'laboratory-like'/social experiments, etc.)

Other (e.g. documentary analysis; conversational analysis, etc.)

[IF NOT CLEAR FROM RESPONSE SO FAR**: Did you use particular data analysis software or other research instruments or techniques to collect or process data?**]

SKILLS AND TRAINING

5. In hindsight, what were the main skills you developed during your PhD?

6. Were you required to take research methods classes in the institution where you studied as part of your PhD programme?

IF YES:

What did this involve?

PROBE FOR TIMING – **1ˢᵗ year only?**

What proportion of time?

Formal classes or less structured?

Range of methods covered and time devoted to each?

Was research methodology mainly training in skills and techniques or did it also include critical evaluation of research more broadly?

Did it include writing and presentation of research findings?

Was there any formal assessment of learning?

7. Did you undertake any external research methods training as a PhD student?
[IF YES, PROBE FOR DETAILS TO COMPLETE GRID BELOW]

Topic/title of course	Provided by..?	Location	Length	Who paid?

8. Are there any areas of research in which you feel, with hindsight, that you would have benefited from more training?

9. You are probably aware that since you completed your studentship, there has been considerable attention paid by the UK research funding agencies to broader skills development for personal and professional development on PhD programmes. I'm going to ask you some questions now about the extent to which you had the opportunity to develop such skills during the course of your PHD. I am going to ask about types of skills and ask whether you were <u>explicitly taught (formally)</u> or given any <u>guidance in developing them</u>.

First, RESEARCH MANAGEMENT SKILLS, for example:

Project management

Time management

Managing resources

Identifying sources of research funding, applying for funding

Other

What about..

research ethics?

data protection issues?

intellectual property rights?

Were you given any formal training or help in developing in COMMUNICATION SKILLS, FOR EXAMPLE..

different styles of writing for different audiences?

oral presentation of research findings?

networking?

team-working?

Other?

Were you given any opportunity to develop career management skills, though your department or the university careers advisory service
[PROBE FOR DETAILS

CV writing

job interview techniques

self-presentation

career planning?

Other?

10. Did you do any paid work during the time you were a PhD student [t**eaching, research assistance? Purely for the money, for career development, both?** PROBE FOR DETAILS, ESPECIALLY EXTENT TO WHICH IT WAS RELEVANT TO WIDER CAREER DEVELOPMENT]

11. How was your PhD funded? [PROBE FOR HOW FEES WERE COVERED, RESEARCH COSTS, ETC. IF NOT PROVIDED SPONTANEOUSLY]

12. Did you have a clear idea of what employment options might be available to you at the beginning of your PhD?

CAREER HISTORY

I'd now like to move on to talk to you about your career history since completing your PhD…..

13. Did/do you have a clear idea about what you wanted to do next, in career terms, after you had/have completed your PhD?

14. Did you start applying for jobs:

(a) before you had completed your PhD?

(b) after submitting it, before the oral examination?

(c) after you knew it had been awarded?

[PROBE FOR IMPACT OF AWARD AND ADAPT FOR NON-COMPLETERS]

15. Can you talk me through your career history from the time you submitted your thesis until the present time, including periods of unemployment/non-employment. You submitted Your thesis in [   ]) What have you done since then? Can we start with the month you submitted

Appendix Two

1 Date from: Month, year	2 Date to: month, year	3 **Nature of main activity** (PLEASE MARK *ONE* BOX FOR EACH ACTIVITY)		4 If employed, was your PhD qualification required for this job?	5 Do/did you use the subject/ discipline knowledge you acquired during you PhD?	6 Do/did you use skills developed on your PhD course?
July '99 1		**Employee** *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
2		**Employee** *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
3		**Employee** *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
4		*Employee* *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
5		**Employee** *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
6		*Employee* *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
7		*Employee* *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
8		*Employee* *Self-employed* *Studying* *Unemployed* *Other*		Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

For each period where the main activity was employment or studying please give relevant details					**ALL PERIODS**
7 **a) job title (course title if studying)** (e.g. primary teacher, software engineer, sales assistant) **b) name of employer/institution public, private or voluntary sector**	**8** **Type of contract** (EMPLOYMENT ONLY) (PLEASE MARK **ONE** BOX ONLY)		**9** **Brief description of the main tasks in your job** (EMPLOYMENT ONLY)	**10** **Size of organisation (number of employees)** (EMPLOYMENT ONLY) (PLEASE MARK **ONE** BOX ONLY)		**11** **Reasons for change to next activity**
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary Other temporary	☐ ☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999) Very large (1000+)	☐ ☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary Other temporary	☐ ☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999) Very large (1000+)	☐ ☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary Other temporary	☐ ☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999) Very large (1000+)	☐ ☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary Other temporary	☐ ☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large 250-999 Very large (1000+)	☐ ☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary	☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999)	☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary	☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999)	☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary	☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999)	☐ ☐ ☐	
a) b) c)	Permanent/ Open-ended Fixed term Agency temporary Other temporary	☐ ☐ ☐ ☐		Small (under 25 employees) Medium (25-249) Large (250-999) Very large (1000+)	☐ ☐ ☐ ☐	

CURRENT SITUATION [ALL IN EMPLOYMENT ONLY]

I'd now like to ask you a few more detailed questions about your current/last job. You said just now you are working as a………………………………..

16. How did you find out about this job? [PROMPT: MEDIA ADVERTISEMENT; EMPLOYMENT AGENCY; APPROACHED BY EMPLOYER; APPROACHED THE ORGANISATION DIRECT; THROUGH PERSONAL CONTACTS; THE CAREERS SERVICE?]

17. Do you know how many other applicants you were competing against for this job?

      If yes, do you know how many other candidates were short-listed?

      [PROBE: **Did other candidates have PhDs?**

      Was a PhD asked for as essential or desirable in the job details?

      Do other people do the same job as you in the organisation?

      IF SO **Do they all have PhDs?**]

18. Why do you think *you* were recruited?

19. [IF NOT APPARENT SO FAR: **Do you think having a PhD was an advantage?**]

20. Why did *you* decide to take the job?

21. Were you considering any other job options at the time? If yes, what were they?

22. [**NB** IF APPLICABLE]

You said just now that you use/d skills developed in your PhD programme in your current/last job? Can you give me an example?

23. [**NB** IF APPLICABLE]

And you said you used the subject/discipline knowledge you acquired on your PhD in your current/last job? Can you give me an example of that?

24. We are interested to know what members of the PhD sample *actually do* on a day-to-day basis. Starting with when you began working and what you did first, can you tell me what you did today/yesterday/on your last working day?

25. What do you *like* about your job?...

26. ..and is there anything you *don't* like about it?

27. Do you mind telling me your current/last salary, before tax? [IF YES, EXPLAIN THAT THE INFORMATION IS CONFIDENTIAL AND THE QUESTION IS ASKED SO THAT WE ARE ABLE TO ESTABLISH WHETHER EMPLOYERS ARE RECOGNISING THE VALUE OF SOCIAL SCIENCE PHDS]

28. Do/did you receive any other benefits, such as a company car, private healthcare, non-contributory pension, company discounts?

CAREER DEVELOPMENT

29. How happy are you with your career progression since submitting your PhD?

30. Have you experienced any obstacles or barriers in your career development since submitting your PhD?

31. Have you been applying for [other] jobs recently? [IF YES, PROBE FOR DETAILS]

32. How do you see your career progressing from here?

33. What would be your 'ideal' job?

34. Do you believe that your PhD training improved your ability to get the kind of employment that you wanted?

35. What do you value most about your experience of doing a PhD?

36. That's it. Thank you very much for letting me ask you these questions. Do you have any other points you'd like to make about your PhD or your career so far…?

If I have any further, follow-up questions, is it OK if I call you again? When the project is completed, we will want to make a summary of our findings available to participants and will email all those who were interviewed. The email address we have for you is [INSERT:]. **Is that the best one to use, say, if we make contact in six months or so?** [CHECK OUT BEST CONTACT ADDRESS IF ANSWER IS NO].

Thank you again for taking part in this interview.

Appendix Three
Employers Interview Schedule

esru/IER project - **The demand for highly-qualified social scientists**

Questionnaire for Graduate Recruitment Managers or Human Resource Specialists responsible for graduate recruitment

Stress that the information collected in this survey will be treated in the strictest confidence. No details about individual respondents or their organisations will be provided to any third parties, or published without the permission of those involved.

NAME OF ORGANISATION: ……………………………………………..

RESPONDENT: …………………………………………………………

JOB TITLE: ………………………………………………………………

LENGTH OF TIME IN CURRENT JOB: ……………………………………

LENGTH OF TIME WITH ORGANISATION: …………………………………

INTERVIEWER: ………………….. DATE OF INTERVIEW:

RECRUITMENT OF HIGHLY-QUALIFIED SOCIAL SCIENTISTS

How many people are directly employed by your organisation in the UK?

What proportion of these are graduates? (approximately *- record comments*)

How many new graduates did you recruit into jobs for which a degree was required in 2003-4?

How many had PhDs?

How many graduate vacancies were advertised in 2003-4?

…and how many applications were received for those?

Into what jobs in the organisation are new graduates appointed? (*probe on detail of information required in Form 1*)

Were there any vacancies which proved difficult to fill?

   If yes - Which and why?

Discuss approach to recruitment of PhD-holders - preferred/incidental/ regarded with suspicion?
What are your views about candidates with PhDs and masters' degrees?
(*if not clear*)
Do you recruit PhD grads at the same entry level as graduates as a whole, or are there different ports of entry for new graduates with different ranges of prior work experience? (R*ecord comments and probe for examples)*

Are those with PhDs paid more initially or the same as those with masters and or good first degrees?

Which methods do you use to attract junior researchers and other 'newish graduate' posts..
❑   Do you target particular institutions...courses…subjects?
    *If yes…*Which? Why?

Have you changed your graduate recruitment *policies* or *practices* in the last three years and if so how and why?

In your experience of graduate recruitment recently, have you been impressed, in general, by the overall quality of candidates? (*Record comments*)

(..*probe, if not apparent from response)* What have been the main strengths and weaknesses of applicants?

(*probe ii*) In the last few years, have you experienced particular difficulty in recruiting candidates with particular skills and knowledge?

RESEARCH SKILLS SOUGHT AND/OR DEVELOPED IN-HOUSE

METHODOLOGICAL EXPERTISE

Quantitative

Familiarity with large scale dataset analysis
Knowledge of particular datasets
Statistical competence (what levels for what posts?)
Survey design
Attitude measurement
Competence in particular data analysis packages (e.g. SPSS)
Other?

Qualitative

Qualitative data collection and analysis
Knowledge of qualitative data analysis software (NUD*IST, Nvivo, etc)
Interviewing
Focus group management
Other?

RESEARCH MANAGEMENT SKILLS

Project management
Time management
Managing resources
Identifying sources of research funding, applying for funding
Research ethics?
Data protection issues?
Intellectual property rights?

COMMUNICATION SKILLS

Different styles of writing for different audiences?
Oral presentation of research findings?
Networking?
Team-working?
Interpersonal skills generally?

SELF-MANAGEMENT/CAREER PLANNING

How far does the organisation encourage people to stay or to gain experience elsewhere?

Finally..
In terms of ESRC postgraduate research support and research training, what should be their priorities, in terms of developing the kinds of highly-qualified social scientists this organisation requires?

Any other comments on the 'employability' of highly-qualified social scientists?

THANK RESPONDENT WARMLY.

Appendix 4
Note circulated to CIHE members and published in AGR newsletter

Have you recently recruited an employee with a PhD in a social sciences subject?

The Economic and Social Sciences Research Council (ESRC) is keen to establish the extent to which employers outside academia recruit highly-qualified social scientists – and whether postgraduate research degree study equips such candidates to meet the needs of employers. They have commissioned graduate labour market researchers Peter Elias and Kate Purcell to find out. If you are an employer in industry, commence or public services, or have recruited such candidates in the last few years (- or haven't, and have views about why not), the researchers would value the opportunity to talk to you, over the telephone or in person. If you can help, email or telephone Professor Kate Purcell, at the Employment Studies Research Unit, UWE (kate.purcell@uwe.ac.uk 0117 328 3476) or Professor Peter Elias at the Institute for Employment Research at the University of Warwick (p.elias@warwick.ac.uk 02476 523286) to fix a time for a short interview.