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RECONFIGURING CONTRACT RESEARCH?: CAREER, WORK AND LEARNING IN A CHANGING EMPLOYMENT LANDSCAPE

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Abstract

This paper has been developed from research carried out within the ‘Learning as Work’ project, an ESRC funded multi-sector study in the UK (2003 – 2008)¹. It discusses some initial findings from case study research which is focusing on the effects of contractual changes on the learning opportunities, working lives and career expectations experienced by contract research staff within Higher Education (HE) in the United Kingdom. The paper draws on a series of in-depth face-to-face interviews carried out with senior managers, contract research staff (CRS), principal investigators and other key staff members across three faculties, spanning both the ‘hard’ and ‘soft’ sciences, in one research intensive university. These are suggesting that it is unhelpful to consider CRS as an homogenous group. Factors relating to the historical relationship between research and career trajectories in contrasting disciplines; the requirements of diverse funding sources; changing expectations regarding ‘work-life balance’; the wider labour market context, as well as the nature of specific departments in terms of management style, priorities and culture, were all relevant to the lived experiences and perceptions of our sample.

Introduction

It was not until the mid 1970s that contract researchers (CRS) became known as a specific category of university staff. Since that time, and alongside the general rise of fixed term employment within HE, the numbers of CRS have substantially increased. The figures provided by HESA, for example, show that in 2004/5 there were 36100 CRS in HE compared to just 5886 in 1978. There is a relatively small research base on CRS. However, studies have identified a range of negative effects associated with the employment status of this group, compared with those categorised as ‘academic’ and ‘established’ staff whose salaries are paid out of university core

funding. These effects include, job insecurity, inferior standing and lack of career structure (see, *inter alia*, Williams *et al*, 1974; Freedman *et al*, 2000). All such aspects have been seen to impact adversely upon researchers' careers and identities, as well as on recruitment into the HE sector particularly in the areas of science, engineering and technology. There have been a number of initiatives designed to improve matters, such as the Concordat (1996), the Research Careers Initiative (1998) and the Roberts Review (2002). In addition, the recent Fixed-Term Employees Regulations (2002), which heavily regulate the use of fixed term contracts and outlaw any 'unfavourable treatment' of staff who are on such contracts, indicates that contract research is now being significantly reconfigured. Under the new legislation any researcher who has completed four or more years continuous service and has had their contract renewed must now be moved on to an open ended contract unless the use of a fixed term contract can be 'objectively' justified by the employer. Employers must also show that they have considered contract researchers for other positions available within the university provided researchers meet the requirements of the job. Moreover, career and staff development opportunities should now be made available to all research staff. The aim of these changes is to reduce the negative effects of fixed term arrangements which have long characterised the contract research role. They could also be expected to improve researchers' learning and career opportunities, and to have a positive influence on the development of professional identity.

This paper explores the initial impact that the contractual changes are having on CRS in one 'research intensive' university in England. It draws on a series of in-depth face-to-face interviews with senior university managers, CRS, principal investigators and other staff across three faculties spanning both the 'hard' and 'soft' sciences. The discussion is based on initial findings from the research, which are indicating that researchers are tending to share the view that the contractual changes do not obviate their feelings of job insecurity and ambiguous identity, nor reduce the perception that they have 'inferior' status compared to colleagues on 'permanent academic' contracts. On the other hand, there are indications that some researchers are welcoming the resources the university is allocating to support their personal development. Overall, however, the findings are suggesting that it is unhelpful to consider CRS as an homogenous group. Factors relating to the historical relationship between research and career trajectories in contrasting disciplines; the requirements of

diverse funding sources; changing expectations regarding 'work-life balance'; the wider labour market context, as well as the nature of specific departments in terms of management style, priorities and culture, were all relevant to the lived experiences and perceptions of our sample.

The paper begins with a brief description of the case study research undertaken and is followed by a discussion of emergent findings in relation to four themes: occupational and career development, perceptions and understandings of contractual changes, identity 'typologies', and career trajectories.

The Research

The research was conducted in two stages. First, a series of face-to-face key informant interviews were undertaken with senior HR, personnel and staff development managers as well as with the Deans in three faculties spanning the 'hard' and 'soft' sciences. The purpose of these interviews was a) to obtain contextual information b) to gain an institutional perspective on how the contractual changes were being perceived and implemented; and c) to explore similarities and differences in how the changes were being interpreted in contrasting faculties and departments. Preliminary analysis of the key informant data indicated that there did appear to be interesting inter and intra faculty differences. It was therefore decided to focus the second stage of the research on three departments, one from each faculty to investigate how the new contractual arrangements were being received and interpreted in diverse departmental and disciplinary settings, with different traditions of research funding and concepts of CRS career trajectories. The department level research has involved interviews (approximately 45 minutes to one hour in length) with Heads of Department, Principal Investigators and CRS at different levels of seniority and experience (see table one) and with a mix of males and females. We also attended an annual conference for CRS and one CRS committee meeting. A total of 54 interviews have been carried out during the two data gathering stages. All interviews were recorded, fully transcribed and then analysed using Atlas Ti.

Summary Table of Departmental Level Interviews

Job Title	Dept A Science	Dept B Applied Sciences	Dept C Social Sciences	Total
R. Associate	4	5	3	12
R. Assistant	2	1		3
R. Fellow	2	3	4	9
Senior R. Fellow	1		1	2
Principal Investigator	2	1	2	5
Centre Head			1	1
Head of Department	1	1	1	3
Total	12	11	12	35

The interview evidence is generating a range of findings which our preliminary analysis suggests can be usefully discussed under the following four themes.

Occupational and Career Development

The negative effects of contract research have been well documented. Patrick (1998), for example, highlights how studies carried out since the 1970s have all emerged with very similar findings - broadly, that those doing contract research experience high levels of job insecurity, an inferior 'second class' status compared to academic staff on permanent contracts, and a lack of a coherent career and development structure (see also Williams *et al*, 1974; Bryson & Tulle-Winton, 1994; UCoSDA, 1997; Freedman *et al*, 2000; Roberts, 2002; Allen-Collinson, 2003; Campbell *et al*, 2003). These negative effects and their implications, for Higher Education Institutions (HEIs) as well as CRS, has resulted in several policy initiatives. One key intervention, which occurred in 1996, was the development of a 'Concordat to Provide a Framework for the Career Management of Contract Research Staff in Universities and Colleges'. This was quickly followed in 1997 by the Research Careers Initiative (RCI), which was established to oversee the implementation of the Concordat across the sector. These initiatives were organised by several funding bodies and were principally aimed to set out a framework for the better management of contract research staff. The main purpose of both initiatives was to address the issue of recruitment and retention of CRS and ensure that 'appropriate investment in career management' for contract researchers would be implemented in UK universities and colleges (Concordat, 1996: sections 8 and 9). To achieve this several

areas of commitment for universities were outlined and encouraged: they included, developing and providing CRS with quality training and career advice and guidance.

Our case study university displayed a deep commitment to improving the working conditions of CRS and enhancing their career prospects. This was evident across the university's promotional and recruitment literature, most of which was publicly available on their web site, and also internally, through staff information web pages, intranet/message board facilities, training and career development programmes, communication strategies and the annual CRS conference. The information, development and communication strategies that were in place for CRS were generally well received by our CRS interviewees across the three faculties. Most considered the university to be a supportive environment for their career development. In line with the commitments already outlined, two main areas were cited as being most valuable to them. One area involved training. This included practical generic courses, such as those concerned with ICT and also courses that were more research specific. Whilst the latter often also involved practical 'hands-on' training, such as using research specific software, they also included courses on broader issues such as, for example, teaching and presentation skills, and research proposal writing. Although formally geared towards enabling CRS to develop specific sets of practical skills, some researchers emphasised how they also had additional value insofar as they increased their awareness of occupational expectations and broader sectoral issues:

I actually use the courses that are run by the Careers Centre here. It really looks after contract researchers ... it's really useful sometimes to go to some of those courses. I was telling (PI) yesterday that I'd been to one and I said I suddenly really fully understood why, the propagations for the RAE, why they are quite so important. **(Female, Dept A, Research Assistant)**

Other CRS, however, pointed to the university's commitment to career advice and guidance as being of most importance to them. Although the support available included individual career discussion appointments as well as more general workshop sessions, many considered that the most useful form of support being offered to them was advice and practical help in gaining new employment once their contracts had ended:

I think the careers advice here is very good and they do seem to have a whole section to help, geared to help contract research staff find new jobs and new employment, which I think is incredible considering that they're going to be leaving the organisation that's helping them get the jobs. So I think it's fantastic they do that. They do tend to look after their staff even if they're losing them. **(Female, Dept B, Research Assistant)**

Many CRS and senior managers shared the view that the careers counselling and advice process helped individuals make the transition to alternative employment. Both groups recognised that breaking the link between external funding and specific individuals could help to reduce CRS redundancies, particularly if alternative sources of funding became available. It was also recognised that the 'loss' of CRS meant the loss of valuable skills, experience and expertise to departments as well the institution as a whole.

'It's nice on paper': Perceptions and Understandings of Contractual changes

The fixed term contract legislation, which came into force in October 2002, was seen by some senior managers as offering a potential antidote to many of the problems concerning contract research, particularly in relation to job insecurity. The legislation regulates the use of fixed term contracts and also outlaws any 'unfavourable treatment' of staff who are on such contracts. The regulations affect all staff who are employed on fixed term contracts who have completed four years continuous service (or more) by 10th July 2006 and have had their contract renewed, or have begun their second contract, during this period. Under this new legislation these researchers must be moved on to an open-ended contract, unless the use of a fixed term contract can be 'objectively' justified by the employer, and must be considered for other positions available within the university provided they meet the requirements of the job. If redeployment is not possible then redundancy procedures must be followed.

The university was among several that were implementing the contractual changes prior to the July 2006 deadline. To aid the transition, channels of communication between CRS and senior managers were increased and a departmental CRS representative system and various university working groups were developed. The process of moving eligible researchers from fixed term to open-ended contracts

had only just begun at the start of our research. This was accompanied by uncertainty and confusion amongst senior managers across Personnel, Career Development and the three faculties, particularly in terms of how the open-ended contracts could be financed and how the redundancy process would be managed. CRS, themselves, considered that, in spite of the commitment of the university, the new contracts were as yet bringing few positive tangible changes to their working conditions and general career prospects. As the following quotes indicate, the new arrangements do not appear to have been accompanied by the sort of additional core funding that could, for example, routinely bridge CRS between projects:

... the problem is money. You know, you should have funding and you can have an open ended contract but when there's no funding then you're on the street. So it's nice on paper but in reality it doesn't really change anything. **(Male, Dept A, Research fellow)**

To be honest I don't think it's going to make any difference to me at all, I think it's just paperwork. I don't honestly see it's going to change my life any. I've got, as I said, a five year programme role. When we get to the end of that if I haven't done enough work that the (funding body) want to keep that on, I don't see there's a position. I don't see the university, because they're externally funded, I don't see how the university can magically find all these salaries. **(Male, Dept B, Research Associate)**

... the implementation phase of this agreement is resulting in people still connecting individuals with individual streams of funding. So once you're away, because there's a six-month redundancy period now, once you're six months away from the end of your contract I think you're being put forward for redundancy instead. **(Female, Dept C, Research Associate)**

In other words, and as illustrated in the above quotations, following the introduction of the new arrangements, contract research is still dependent on competitive bidding for relatively short term grants from external funding sources. It is perhaps not surprising then that CRS, across the three faculties, felt that while the new open ended contracts essentially remain funded by external grants, genuine security of employment would not be forthcoming. The majority also considered that the new contractual system was doing little to change their 'second-class' status in relation to lecturing staff:

It's always been a problem in this department because they always refer to it, you know, I think all universities do and they should change it, you know, you've got this 'academic staff'. So if you're HEFCE funded, really they should say HEFCE funded staff. So all the lecturers are referred to as 'academic staff' and then you're 'a contract researcher', or whatever, which really you're an academic as well. You know, if you look up the definition of academic you are an academic but you allow these people to make you feel crap ... rather than being proud of your achievements, ability and having the feeling of self worth. **(Female, Dept A, Research Associate)**

Some CRS saw the new contractual arrangements as being beneficial to them insofar as the transfer from a fixed term to open-ended contract meant that they would be eligible to apply for a mortgage. However, interviewees also raised concerns about the new arrangements. Three main issues were raised. First, although open-ended contracts could keep research staff in post longer, and so enable them to gain experience and progress, individuals will inevitably become more expensive to employ. Over time this would make it more difficult for them to gain new research posts and many would find that they would have to take a reduction in salary in order to secure employment. Second, if researcher salary costs increase then projects will require higher funding. Ultimately, this could mean a reduction in the number of projects gaining funding and could also encourage PIs to reduce costs (so making their bids more competitive) by employing only new and inexperienced researchers. A third issue voiced by many was that the move to open-ended contracts was encouraging a system of redeployment which could potentially lead to some CRS becoming underemployed and ultimately deskilled:

My understanding with the change in contract was that at its heart was a move to make provisions for contract research staff better ... the university will seek to find some other grant that's currently available that you can work on. ... what I wouldn't want is for the university to say well we have nothing in the area that you study but there's a test tube washing job going in Chemistry and we'll put you on that so you can continue your job. That would be non productive in many ways. **(Male, Dept A, Research Associate)**

Being found work in areas unrelated to one's specialism and research interests in order for employment to continue on an open-ended contract was seen as undesirable across all the faculties. However, for those in the applied sciences

department (B), it was seen as going against important disciplinary expectations and sensibilities concerning skills and career development:

Say I got another contract with my boss, then I'd just become a clone of her ... there's no place for someone doing the same, exactly the same as her, so you need to find your own new niche, which the best way to do that really is to go somewhere else to learn new techniques and so you're the only person who has those ... yes it's lovely if you have permanent contract where you get moved on to another project... but I'm really interested in the specifics of what I'm working on and I want to be an expert in that. I don't want to just be moved round every three years and learn something new and never be an expert or just be someone who can do one technique and that's all I'm doing. ... I didn't get into this career for that, I got into this career for picking out subjects and getting really an expert on that one thing. **(Female, Dept B, Research Assistant)**

Although it was considered that the move to open-ended contracts had not fundamentally changed their security of employment, the CRS in department B had another concern. They suggested that the concept of open-ended contracts was counter-productive in that it would discourage young researchers from gaining the sort of experience and expertise that would help them build successful research careers. According to these researchers, career building depended on learning highly specialised skills and techniques which they were unlikely to acquire if they stayed in one department or research group. If the availability of open-ended contracts resulted in them staying in one workplace this could have an unintended detrimental effect on their progression.

CRS: Identities and 'Typologies'

During the 1970s, the CRS population consisted of postdoctoral researchers, predominately young male scientists, who would take up one or two of the three year fellowships funded by Research Councils prior to taking up their (guaranteed) appointment as a university lecturer (Bryson 1999: 32). In the current climate, however, CRS are now characterised, according to Roberts (2002: 148), as falling into three distinctive categories or 'typologies':

- Career Starters, typically in their first or second contract, who enter contract research to gain experience leading to a continuing academic position or a more permanent research career, and typically stay as CRS for only a short period;

- Career Researchers, who have worked as CRS over a longer period and wish to remain in research, ideally in an academic environment; and
- Job Entrants, who may enter contract research as a job, but not explicitly to make a career in research, and who may or may not remain in research or in related academic work.

The CRS who participated in our study could broadly be defined as falling into one of these categories. However, in their descriptions of themselves and their occupations, most drew attention to the ways in which these categorical identity positions were not simply taken up and shaped by them through personal choice but, rather, were being influenced by various external constraints. Many of those who fitted the profile of Career Starter, for example, had had more than one or two contracts and had also experienced a fairly long period of employment in contract research while they waited to move into more permanent research or lecturing posts. Three factors were regularly mentioned as influencing this situation. One concerned the lack of geographical mobility for some due to family commitments and another, departmental attitudes towards recruitment, as exemplified in the following quotation from a researcher who had been doing contract research for eleven years:

I'm kind of not very geographically mobile so that doesn't help and the department would never take me on as a lecturer unless I went off to Yale and did a couple of years at Yale ... papers there and then came back and then went through the review. ... I would have to leave ... and then come back again, yeah. So they never would just take me on which is a shame because I like the department and obviously I like working with (PI) as well. **(Female, Dept A, Research Associate)**

A third factor, raised by CRS in the applied science department, was the opinion that the current supply of postdoctoral researchers outstrips the availability of 'established' academic posts:

I mean the problem with a postdoc is what's it about, are you a trainee PI? That's traditionally been the case, so postdocs were originally were set up as trainee PI's, we're talking, you know, fifty years ago, thirty, anything from thirty to fifty years ago and if you got a job as a post-doctoral researcher then your chances were very high of becoming, of becoming a lecturer and becoming a PI. So that's what the whole system was set up for basically training PI's. Now you can say that probably the whole system's failed because less than 20% of postdocs get jobs as PI's, yet

that's what all the training is for, so I think you have to accuse universities of failing in their duty of care in giving people all this training for something which 80% of them don't attain. If 80% of our undergraduates failed their degrees, we would be saying that we weren't doing a good job. Yet 80% of postdocs never attain what it is that they, the stated goal for what they're doing and yet we seem to consider that just fine. So the system is not working and people are recognising this in (the university), certainly at the management end, it's at the forefront of recognising it and fortunately of course the system at the moment is very good at getting research done very cheaply. **(Male, Dept B, Research Associate)**

As illustrated by the above quotations, in the contemporary labour market context those inhabiting the Career Starter role cannot be assumed to be young 'post docs'. In reality, 'career starting' often means a lengthy period on a succession of funded projects. It also means that as individuals develop their domestic and family lives during these years, they may be less able to respond flexibly when a labour market opportunity does arrive.

Among those interviewed there were only three CRS who fitted the description of Job Entrant. Two of these were based in the policy oriented Social Sciences department and one was based in the applied science department. All three described how they had taken up research posts in order to explore whether an academic/research career would be suitable for them. Of the three, only the researcher in applied science had decided not to pursue a research or teaching career in HE any further.

The majority of interviewees fell into the 'career researcher' category insofar as they wished to remain in research only posts, ideally in an academic environment. However, the possibilities, opportunities and aspirations of the researchers within this category differed across the three departments, and were linked, as with the Career Starters, to external factors as well as personal preferences. The Career Researcher category was also tied in with different types of research career trajectories.

Career Trajectories

Building upon the work of the Research Careers Initiative (see above), Roberts (2002: 149-50) proposed that CRS should be encouraged, via staff appraisal, to pursue one of three different career trajectories:

- The Industrial Trajectory – research in a corporate environment which utilises broader or applied research. CRS employed initially in academia and then move into industry.
- The Academic Trajectory – carrying out research alongside a teaching role in university.
- The Research Associate Trajectory – for those who want to continue in research within a university but who do not want to pursue an academic lecturing career.

Industrial Trajectory

Many CRS across the three faculties had ties and connections with ‘industry’ or other external agencies (such as Government Departments and Charities). However, interestingly, the movement between CRS and these environments was wholly inward-bound – that is researchers had gained employment within the university after having worked, or through working, within these environments. None expressed the desire to move out of the HE sector and into industry or other agencies to develop and establish their research careers. It was in the policy focused Social Sciences department that external links appeared to have the most impact and it can be surmised that this was aided by the policy focus underpinning the department’s research and teaching activities. Those CRS in this department who were following an industrial career trajectory were experiencing more job security as their posts were funded on a firmer and continual basis:

The [Charity] funds my post to look at issues of (areas specified). So they’re using me as a specialist resource. So the [Charity] have about five research fellows in universities, so it allows them to have contact with the university to get all the sort of surrounding support and also have research which is directly related to what their issues and concerns are.
(Female, Dept C, Research Fellow)

Although many of those interviewed acknowledged the possibility of developing their career within industry or other organisations (an outward-bound industrial trajectory) most considered such a move to be unattractive. Some suggested that industry or other non-academic research working environments provide limited research and career opportunities due to a lack of academic freedom, fewer resources and smaller pools of

funding. In addition, others saw outward-bound trajectories as being difficult after a period of doing postdoctoral contract research:

...I have talked to quite a few industry people who will actually say that doing that postdoc is detrimental to your recruitment prospects in industry. ...Because postdocs don't give them skills which they're interested in. They consider that normally that by the time people have finished their PhD's, or maybe after one or two years of postdoc's, most people have got the technical skills already because they can, in industry they do on the job training the whole time anyway. But they, they consider that rightly or wrongly, that people who do too much post-docking don't develop certain aspects of the skills which they require which are in team working or soft skills if you like and, and also there's this kind of opinion that they get stuck in their ways and are not able to change. **(Male, Dept B, Research Associate,)**

Academic trajectory

In common with other research that has been undertaken concerning contract researchers (see, *inter alia*, Bryson & Scurry, 2002; Allen-Collinson, 2000, 2003; 2006), the majority of CRS we interviewed did not aspire to carry out research alongside a teaching role and thus were not pursuing an Academic Trajectory (a lecturing career). Nonetheless, teaching was already being undertaken by many researchers. Although those in Department A (science department) were able to take on some teaching duties if they wished, for those in the social and applied sciences departments teaching was often an important feature of their work. For CRS in the social science department taking on as much teaching as possible and generally making oneself indispensable by delivering specialist courses, for example, was a deliberate strategy to secure a permanent position:

You're not obliged to do teaching if you're on a research contract, but obviously if you want a permanent post here, then it usually very much helps, I mean it depends, each case is different. But you know, if you can, the university's perception of the full academic roles that it involves teaching, administration and research. So in terms of security, you're best off trying to move in that direction ... I do a bit of everything now really which is why I'm looking to move on to the teaching and research scale." **(Male, Dept C, Research Fellow)**

Significantly, however, the option of using teaching as a strategy for obtaining a permanent academic post was not open to those in the applied science department.

This was because undertaking a range of teaching activities was viewed as an integral element of the CRS role:

...first of all you do small group tutorials and practical demonstrating to undergraduates, so that's part of delivering the undergraduate programme before, you know, material for the undergraduate course. And then there's sort of informal mentoring of postgraduate students, particularly people in their first year of their PhD who tend to need some assistance in getting going. And then there is undergraduate projects which run for eight weeks every year and you typically get one undergraduate working with you all the time...direct supervision, exactly.. just recently this summer, I had an undergraduate working with me over the summer as well for six weeks." **(Male, Dept B, Research Associate)**

Opportunities and strategies for securing permanent posts, and indeed for pursuing (or resisting) the Academic Trajectory, differed and were not equally available to CRS across the three departments. As exemplified in the quotations above, such possibilities depended as much on disciplinary cultures and departmental expectations and traditions as on the aspirations and actions of researchers.

Research Associate Trajectory

The career trajectory most desired among the CRS across the three faculties was the Research Associate Trajectory, where the ultimate goal was to continue to work in research within a university setting but without teaching duties. Following Bryson's (1999) respondents, the majority of CRS we interviewed also preferred to do research over teaching:

Well I don't know how you feel about being a researcher but it's a kind of a luxury I think not having to teach or do much by way of admin. I get to come and go as I please at what time I like and everyone is quite happy for me to do that provided that there's some output. I've been recently prolific these last few years so that's all been great. Obviously I would like to be able to continue doing that for a long as possible. It's my seventh year post-doc and I've enjoyed it but there is a perception in some quarters that at some point you've got to, you know. **(Male, Dept A, Research Associate)**

I just want to do research, you know, that's what I'm good at, I don't particularly enjoy teaching. But there's no facility within the university to allow you to do that, and you're actively discouraged from doing that. So once you've done one postdoc, then pretty much tells you, you know, you need to start thinking about teaching or leaving. **(Male, Dept B, Research Fellow)**

... at the moment I kind of think no I'm going to want to do research, I don't really want to do teaching. But I think ... you kind of need to do both ... I've heard that it's a good thing to get like teaching experience and try and do some if you can ... but that's not really what I want to do, I want to be a researcher. **(Female, Dept C, Research Associate)**

Interestingly, all the CRS considered that although the Research Associate Trajectory would be the most satisfying, out of all of the trajectories this was the least likely to be attained. As indicated in the above quotations, this was seen to be due to both cultural expectations within HE more broadly, and within departments specifically, concerning the nature of work and careers. For example, within the applied science department, where the researchers were already involved in teaching, more than one type of research (only) research trajectory was discussed. Some CRS in this department considered that it would be ideal to become a 'research only' PI and run their own laboratory groups, while others wanted to pursue a very different role:

I don't really want, I don't want the career in academia and I don't want the kind of robotic industry job. I want something in-between. I want to say working at the bench doing, I mean I do really enjoy doing research science. **(Male, Dept B, Research Associate)**

Because I'm a senior postdoc, because I'm older, I should have got out and you know, done a lectureship or my own fellowship. But I enjoy working at the bench and I don't want to be one of these people who supervises a group and spends 99% of their time sitting in an office because that drives me mad. I like doing the research, I like helping people directly with their research and that's what I enjoy about my job. If I had to go away from that I wouldn't like science, I wouldn't do it. **(Male, Dept B, Research Associate)**

The notion of being able to continue a research career in university 'working at the bench' was an attractive one to many of these interviewees. However, all those who talked about such a role lamented the fact that such positions did not currently exist.

'Working at the bench' was also recognised by some PIs as being a particularly valuable role, and akin to the old 'Staff Scientist' or 'Research Officer' positions in laboratories in the 1960s. For such PIs, those 'working at the bench' were seen as highly valuable 'assets' and they regretted that this position was no longer available:

... what we do need in academia are people who don't necessarily want to become lecturers or professors or whatever but they're superb in the lab. ... And these people are invaluable in your lab. I mean they run the lab. They know where everything is. All we do without people like that is constantly retrain new people and lose skills. ... **(Female, Dept B, PI)**

Within the applied science department, the Research Associate Trajectory thus potentially had two sub-trajectories. However, disciplinary expectation for career paths mitigated against the development of and support for 'bench-work' research jobs. This meant that some CRS, who were dedicated to their profession, were eventually more likely to leave.

Conclusions

This paper has discussed some of the initial findings that have emerged from case study research which is focusing on the effects of contractual changes, brought about through the new fixed term contract legislation, on the learning opportunities, working lives and career expectations experienced by CRS within one research intensive university in England. The areas discussed have covered occupational and career development, perceptions and understandings of contractual changes, identity 'typologies', and career trajectories. The evidence presented, drawn from interviews with CRS and other key staff members across three contrasting faculties and departments, suggests that the contractual changes have not obviated CRS feelings of job insecurity and ambiguous identity, nor reduced the perception that they have 'inferior' status compared to colleagues on 'permanent academic' contracts. Further, the evidence is suggesting that it is important to consider CRS as a disparate rather than homogenous group. The different identity 'typologies' and also career trajectories of the CRS in our study reveal that there are differences in the available opportunities for these to be taken up by researchers. The data has shown, therefore, that the identity typologies and career trajectories of CRS were not simply shaped

through their individual aspirations and actions, but rather through broader facilitative or constraining cultures and expectations within disciplines and departments. In this regard our emerging evidence and analysis is beginning to challenge the appropriateness of undifferentiated policy reforms and employment arrangements as well as the existing research literature which, to date, has not focused adequately on the significance of differences (e.g. in disciplinary and departmental cultures, and routes to career progression) between groups of CRS.

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