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# No Metrics for Postdocs: Precarious Labour in Science Policy

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## Abstract

In recent years, the pressure of producing impacts such as the creation of intellectual property and other commercialisation activities ('knowledge transfer') has increasingly dominated the discourse of research institutions and universities. Research projects can be comparable to 'gigs' when they employ postdocs on precarious fixed-term contracts. However, there seems to be little consideration in research and science policy about the career development of postdocs beyond funded projects and there seems to be no metrics about the contributions of postdocs to knowledge production, nor data about 'brain drain' as a result of precarious contracts. Using in-depth, semi-structured interviews with postdocs, PIs, and support staff, this study aims to understand the perceived roles of postdocs as a career stage and the perceived success factors that help them transitioning from precarious contracts to long-term academic/research positions. The work-in-progress paper will discuss some preliminary findings including the meanings and contexts of postdoc, as well as the problems and issues of precarious, fixed-term contracts in relation to publication and knowledge production. This paper also calls for comprehensive data collection and analysis about the contributions by postdoctoral researchers and the potential loss of knowledge as a result of the precariousness of academic career.

## Introduction

For decades, scholarly works and scientific research have been driven by a reward system that primarily recognises research funding, research metrics and 'mobility' or internationalisation (Ackers, 2008) as key performance indicators. The reward mechanisms have lent powers to governmental bodies and funding agencies who set priority areas and allocate funding accordingly. The pressure of producing impacts such as the creation of intellectual property and other commercialisation activities ('knowledge transfer') has increasingly dominated the discourse of research institutions and universities. Research projects are comparable to 'gigs' when they employ a large number of gig workers (PhD students, Postdocs) whose career paths are insecure and unclear. However, there seems to be little consideration in science and research policy about the career development of postdocs beyond funded projects. There is also no metrics about the loss of precarious labour—and the many contributions they would and could have made to science and society.

The recent OECD report (2020), *Resourcing Higher Education*, has highlighted the harmful consequences of extensive casualisation of academic staff, for example, low retention of researchers, teachers, and students and lower quality of teaching and learning. Kwiek (2019) has examined stratifications in academic performance and power, pointing to the need of predictable career advancement for early career researchers. Flynn (2020) has described the disheartening experiences of being precarious with no clear paths to obtain a research grant or land a permanent position years after earning her PhD. The casualisation of work also limits the participation of the 'gig workers' in university and research governance.

The development and challenges faced by early-career researchers, especially postdocs, have been studied in terms of regimes of valuation (Fochler, Felt and Müller; 2016), symbolic violence (Roumbanis, 2019), practices of appraisal devices (Nästesjö, 2020) and so forth. Most recently, a survey of postdoc conducted by *Nature* (Woolston, 2020) reveals 'great distress' experienced by postdoctoral researchers worldwide. Notably, Milojević, Radicchi and Walsh

(2018) have found dramatic shortening of careers of scientists from 35 years in the 1960s to only 5 years in the 2010s, some of whom as supporting authors only in their entire career. There is, however, a lack of metrics about the (loss of) productivity and performance of postdocs in this competitive research environments due to the limited number of academic and research positions.

This exploratory study aims to understand postdocs as a career stage and the perceived success factors that help transitioning from precarious contracts to long-term academic/research positions, as well as career beyond academia. This work-in-progress paper will discuss some preliminary findings of semi-structured interviews with postdocs and support staff in research institutions, focusing on the relationship between precariousness and knowledge production. It is the goal of this study to establish the need for future empirical and quantitative studies pertaining to the contributions of postdoctoral researchers in knowledge production.

## **Method**

The first phase of the study was conducted between July and September 2020. Twenty in-depth, semi-structured interviews were conducted with postdoctoral researchers and research support staff in universities and research centres in Ireland. The list of potential participants was collated by searching university websites using the title, ‘postdoc’ and similar terms<sup>1</sup>. It is worth noting that, however, the contact information of postdoctoral researchers is not necessarily listed by research centres and universities. As a result, most respondents were recipients of the Irish Research Council (IRC) Postdoctoral Fellowship, partly because their affiliation and contact information have been made publicly accessible. The potential participants were invited to participate in the study by individual emails. An information sheet and an informed consent form were sent to respondents prior to the interviews.

During the interviews, the postdoctoral researchers were invited to talk about their research career and their plans for the future, their experience as a postdoctoral researcher and the pros and cons of postdoc as a career stage, while the support staff were asked to comment on the needs of the postdoctoral researchers, including support for grant applications and career development. The interviews were conducted using Zoom or Skype and are approximately 35-70 minutes in length. They were transcribed fully first by otter.ai and then checked and corrected manually. The transcription is anonymized and coded based on emerging themes. The data collection will continue in early 2021 until saturation has been reached.

## **Preliminary Findings**

In this section, emerging themes will be discussed based on the coding and analysis of the first phase of the study. These preliminary findings show the impact of precarious contracts on publications and related issues for postdoctoral researchers, highlighting the need for future quantitative studies to shed light on the scope and depth of the problems.

### *Postdoc as a Career Stage*

Many senior faculty/academic staff in research institutions and universities have not been a postdoc themselves, for it was not considered as a bridge between doctoral studies and

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<sup>1</sup> There is not a clear definition of ‘postdoc’. Doctoral researchers can be working on funded projects with various levels of freedom in pursuing research interests of their own, while some— most respondents in this study—are awarded with fellowship to engage in individual projects. However, it should be noted that many individuals with a PhD can be working as research assistants, research fellows or under other titles in a research institution or university in Ireland. It is unclear as to whether they should be considered as ‘postdoc’ because they are not classified as academic staff.

permanent (or tenured-track) positions decades ago. Today, despite the lack of data about the percentage of faculty/academic staff with or without postdoc experiences, it is generally understood that newly graduated PhDs would be in at least one and indeed often multiple postdoctoral positions. Many respondents in this study reported that it is not uncommon to have 3-5 postdoctoral contracts before landing a permanent position, or before one decides to quit academia altogether.

Is postdoc a necessary a career stage? Most respondents said yes. However, the reasons demonstrate the complexity of ‘surviving’ in a very competitive environment—that it is considered impossible for anyone to land a position without working as a postdoc for several years, that it needs the time period as a postdoc to increase the number of publications for applying for grants and/or permanent positions, that it is a career stage where one can develop networks considering the preferences for internationalisation and mobility in research career (see Archer 2008).

For respondents who have been awarded an individual fellowship (e.g., IRC, Marie-Curie), the postdoctoral position affords them time and space to prepare publications based on their PhD studies or embark on a new project. These respondents were conscientious of the privilege of the fellowship, for they do not have obligations to undertake teaching or administrative responsibilities in the host institutions. In other words, they can devote all of their working hours to pursue their own research projects and they are also avail of research budget for buying materials and traveling to archives and conferences. Many stated that the time offered by the fellowship has been essential for them to develop as an independent researcher/scholar, partly due to the projectification of doctoral training (see Torika, 2018). For respondents who are working on funded projects, the postdoctoral position affords them to acquire and develop skills before applying for grants as a principle investigator (PI). The respondents mentioned project management and supervision as essential skills in their career development—whether they plan to pursue a career in research institutions or industry. Many reported that they are also developing expertise in methodologies and techniques as a postdoc.

### *Timeframe*

While the respondents articulated the many benefits a postdoctoral position can offer, all commented that the duration of postdoctoral contracts are often too short. Most agreed that a three-year contract is about optimal while shorter contracts tend to create stress and sometimes mental health issues due to the following reasons: first, the lack of job security means that the postdocs would be looking for the next position and working on applications from Day 1 which constitutes a substantial workload in addition to the ‘day job’. Second, their workload can be compounded by the pressure to publish from their PhD work or previous project(s)—with the assumptions that publications will eventually lead them to a permanent/stable position. Third, a new contract usually requires relocation, meaning the lack of support by family and friends. Indeed, as many have reported, an academic career often entails delaying family and personal plans due to the frequent relocation in different cities/countries at the postdoctoral stage, which usually lasts 5-6 years and sometimes longer<sup>2</sup>.

The respondents reported that the precariousness of the postdoctoral positions has negative impacts on knowledge production as they find it difficult to finish writing from previous projects, and/or they sometimes cannot finish a study due to the time constraint of the contracts. There are also cases where one does not have an affiliation and hence loses access to materials

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<sup>2</sup> The estimate of 5-6 years is based on anecdotes as there is a lack of official data.

and support provided by academic libraries and other support units. Many lamented that the short and rigid timeframes simply do not work for the nature of scientific research and scholarly inquiries, which can have unexpected delays or take unexpected turns.

### *The Pseudo-Employee Status*

The precarious, fixed-term contracts also affect the employee status of postdocs. Since postdocs are mostly funded by research councils or other funding agencies, there are no commitments or obligations for the employers to retain the postdocs after the fixed-term contracts. While some universities do provide career development support for postdocs, the options can be minimal compared to those provided for permanent staff. Some respondents reported that they do not have a sense of belonging to the university—which may be better described as ‘host institution’—even though they are supposedly ‘employees’. While some are affiliated with research hubs and communities, some are totally isolated. For instance, the respondents reported that they do not attend staff meeting and/or decision-making processes in their host institution and some felt that they were treated as ‘second-class citizens’. During the initial stage of data collection of this study, it is also clear that postdocs are not necessarily listed as academic staff or faculty on university websites, meaning that often these postdocs cannot be easily found by a Google search. Some respondents maintain their own web presence by hosting a website themselves, or by using third-party services such as academia.edu.

Due to the timeframe of their contracts, the respondents’ involvement in university life is usually limited to their research group, if any. Some respondents were aware of research staff associations, but commented that their activities can be sporadic, and may be discontinued, when active members leave. At the same time, they are also most concerned with their career and spare little time on social activities. Postdoctoral researchers can be seen as a group of ‘gig workers’ who receive limited benefits and have no say on university and research governance, while their contributions to research and knowledge production have been under-documented and understudied.

### **Summary and Future Studies**

This study aims to understand the postdoctoral experiences in the context of science and research policy—Is postdoc a necessary career stage? What are the benefits and challenges? What are the implications for knowledge production and the future of scientific research and scholarly inquiries? The respondents reported that their postdoctoral experiences have been useful for concentrating on a project, learning new skills, and most importantly, developing into an independent researcher/scholar. Postdoc as a career stage, however, can be attributed to the competitive market, that is, the lack of academic positions, for one can argue that PhD graduates can develop their projects and skills in a permanent/tenured-track position without going through precarious contracts. There are many epistemic and labour issues pertaining to the fixed-term, precarious contracts of postdocs, including the loss of knowledge when one switches from one contract to another, or when one leaves the academic/research career altogether. As of now, however, there is no data or metrics recording the contributions to publications by postdoctoral researchers, nor data about the potential loss of knowledge—brain drain—due to precarious contracts. As Stephan (2013) has aptly pointed out, ‘the low price of postdocs hides the true cost of postdocs to society’ (p. 245). While warnings have been raised about “postdocs in crisis” during the pandemic (Nature Editorial, 2020), data and analysis about the publication patterns of postdocs can unearth issues about the consequences of precarious contracts on scholarship and scientific progress.

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