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Precarious postdocs: A comparative study on recruitment and selection of early-career researchers

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ABSTRACT

This paper investigates how the recruitment and selection for project-based postdoc positions are organised in the current academic landscape characterised by increasing temporary research funding and how principal investigators construct the ‘ideal’ postdoc. Our findings are based on a qualitative comparative multiple-case study in Social and Natural Sciences departments of universities in four European countries. This study contributes to the literature on the neoliberal university and academic staff evaluation by using a systemic, power-sensitive approach that examines how postdocs enter the academic system and how manifestations of precarity are exacerbated. Our critical analysis reveals three manifestations of precarity that the current academic system creates for postdocs, related to control, contracts, and careers. We discuss the effects for individual postdocs and their careers and the quality of knowledge production in public funded higher education institutions.

1. Introduction

Contemporary universities are situated in a context of neoliberalisation, where academic work is market-driven and focused on performance, excellence, competition, project-based working, entrepreneurialism and cost-reductions (Bozzon, Murgia, & Poggio, in press; Clarke, Knights, & Jarvis, 2012; Deem, 1998, 2001; Lam & de Campos, 2015; Prichard, 2012). Due to declining government funding of higher education in Western countries, universities (and academics) have to search for new sources of finance (Deem, 2001; Prichard & Willmott, 1997; Slaughter & Leslie, 1997). Therefore, and part of the trend toward the neoliberal university, reliance on external research funding has increased. Academics engage in strong competition for collaborative and commercial research funding to acquire money for their work (Lam & de Campos, 2015). Furthermore, the increasing reliance on competitive external funding also “is the organizational response to the drive and demand for transdisciplinary, fixed-term, solution-oriented research on specific phenomena that are defined as problems at a given time” (Ylijoki, 2016, p. 11).

As external research funding mostly finances temporary research projects the amount of project-based research has grown (Ylijoki, 2010). We refer to this trend as projectification (Ylijoki, 2016). As a result of the projectification of academia, the number of precarious jobs has grown and still grows, especially for early-career researchers, as

large numbers of doctoral and postdoctoral researchers are hired for temporary positions (Lam, 2007; Wöhrer, 2014). We argue that these developments have important implications for the recruitment and selection of early-career researchers, and for the criteria that are decisive for their hiring.

Hitherto, much of the literature on academic recruitment and selection has focused on higher echelons in academia, neglecting how the increasing reliance on external and project-based funding affects a vulnerable groups in the university: postdoctoral researchers (hereafter: postdocs). We define postdocs as contract researchers (Ackers & Oliver, 2007; Harney, Monks, Alexopoulos, Buckley, & Hogan, 2014) with a PhD or equivalent qualification who have non-tenured, research-only academic positions. Although there are a wide variety of postdoc positions, in this study we focus on the postdoc positions originating from external research grants acquired by principal investigators in public funded higher education institutions. Postdocs differ considerably from tenured academics who typically enjoy employment security and other benefits. Postdocs are generally employed on fixed-term, project-based contracts or fellowships and endure precarious work conditions (McAlpine, 2012; Oliver, 2012), such as lack of job security, no career prospects, and strong competition for a limited number of permanent positions (Arnold & Bongiovi, 2013; Ylijoki, 2010). Additionally, previous studies focusing on postdocs in the neoliberal university predominantly focus on postdocs’ lived experiences (e.g., Hakala, 2009;

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Lam & de Campos, 2015; McAlpine, 2012; Müller, 2014), which offer valuable insight into the micro level of analysis. Yet, a more systemic, power-sensitive approach that examines how postdocs enter the academic system and how manifestations of precarity are exacerbated is currently lacking. Such an approach is important because this gives insight into the way academic structures shape academic careers. This article aims to fill this void by studying the recruitment and selection of postdocs in the context of the neoliberal university. We understand recruitment and selection as political, power laden processes producing patterns of dominance and subordination (Bozionelos, 2005; Parker & Jary, 1995).

In this article, we unravel how the recruitment for project-based postdoc positions is organised and how principal investigators advance their interests by constructing the ‘ideal’ postdoc in four universities across Europe. Recruitment and selection practices determine which aspiring early-career researchers enter the academic system and can possibly remain there on permanent contracts, for which the chances are small, as the competition is fierce. For example, in the Netherlands only 20 per cent of all postdocs lands in an appointment as assistant professor (Rathenau Instituut, 2016). This current study is meaningful for early-career researchers, higher education institutions and the development of science, as postdocs in public funded institutions make considerable contributions to the world’s scientific discovery and productivity (Van der Weijden, Teelken, De Boer, & Drost, 2016). Therefore, their selection can have serious implications for the quality and type of research produced.

Our findings are based on a qualitative multiple-case study on recruitment and selection procedures and criteria in Natural Sciences (STEM) and Social Sciences (SSH) departments of universities in Belgium, Italy, Switzerland, and the Netherlands. This comparative study enables us to examine variations in the recruitment and selection of postdocs as well as the type of researchers that are preferred for such positions across national contexts. Furthermore, our critical analysis reveals three manifestations of precarity that the current academic system creates for postdocs, related to control, contracts, and careers.

Next we will explore in more detail the changing institutional context of higher education and the rise of postdocs. Thereafter we will elaborate on the construction of the ideal academic and the recruitment and selection of academics. We then describe our qualitative methodology, including the data collection and the analysis. Then will turn to the empirical analysis of our data. At the end of the article we will discuss our findings.

1.1. The rise of postdocs

Neoliberalisation has affected labour markets and employment relationships, resulting amongst others in “a decline in attachment to employers, an increase in long-term unemployment, growth in perceived and real job insecurity, [and] increasing nonstandard and contingent work” (Arnold & Bongiovi, 2013, p. 290). Low-skilled workers used to be most affected by contingent employment (Nollen, 1996), but precarious employment now also affects highly skilled workers (Armano & Murgia, 2013), such as academics. Precarious employment in academia most strongly affects early-career researchers (Wöhrer, 2014) among which postdocs.

Postdoc positions typically come into existence by externally funded research grants that finance fixed-term research projects (Ackers & Oliver, 2007), ranging from a few months up to a couple of years. These projects are either funded through someone else’s (usually a more senior researcher’s) grant or through personal postdoctoral fellowships (Åkerlind, 2005). Such projects usually give both money and prestige to the grant recipient (Ylijoki, 2016). In Western countries, this ‘projectification’ of academia caused a sharp increase in the number of postdocs, working on project-based research, over the past decades (Åkerlind, 2005; Rathenau Instituut, 2016; Ylijoki, 2016). Figures show that in 2010 in 23 countries in Europe the number of academics

working in “the first post into which a newly qualified PhD graduate would normally be recruited” (EU, 2016, p. 192) was 156.595 (EU, 2012) compared to 191.238 in 2013 (EU, 2016). This is a 22 per cent increase over three years. A similar trend can be found among post-graduate / PhD students, which is related to the projectification too. The number of PhD students in the 23 EU countries has increased from 379.153 in 2010 to 465.252 in 2013 (a 23% increase) (EU, 2012, 2016). The overall numbers of academic staff did only increase with 9% from 918.875 in 2010 to 997.109 in 2013 (EU, 2012, 2016), which shows the disproportionate growth of early-career temporary positions.

The postdoc stage, where time can be spent on research (only), was intended for building publication records and developing new research ideas before moving into stable positions (Bessudnov, Guardiancich, & Marimon, 2015; O’Grady & Beam, 2011). Yet, the number of permanent positions did not grow to the same extent as postdoc positions, as the EU figures revealed. Therefore, the number of precarious postdoc researchers working on a series of fixed-term contracts without prospects for permanent positions is increasing (Åkerlind, 2005; Ylijoki, 2010). This has led to the establishment of a sharp distinction between a core and a peripheral academic workforce.

Precarious postdocs resemble what the dual theory of Human Resource Management (HRM) (Lewin, 2005) labels as the “peripheral workforce” (p. 286): temporary employees who receive little or no employment security and fringe benefits. On the contrary, the “core workforce”, as described by Lewin (2005), is made up of employees who are carefully selected and who enjoy employment security, well-defined career paths, and fringe benefits: tenured staff. The peripheral workforce usually has little or no development and promotion opportunities within the organisation (Ackers & Oliver, 2007; Lewin, 2005). Research showed that postdocs indeed often lack monetary and social security benefits, support regarding library services and training, and access to HRM practices such as performance evaluations and development planning (Harney et al., 2014; O’Grady & Beam, 2011). The dual theory of HRM assumes that the temporary workforce is peripheral to the organisation’s main tasks (Kalleberg, 2000). This might suggest that postdocs lack power because of their precarious position in the workforce, yet they are essential to academic knowledge development and production. As they conduct a considerable part of all research conducted in higher education institutions (Callier & Polka, 2015; Van der Weijden et al., 2016), they do have some counter-power as principal investigators rely on their work for scientific output.

In the literature on the neoliberalisation of academia some attention is paid to postdocs, but this research mainly focused on their lived experiences, such as their identity work and work motivation (Hakala, 2009), their experiences of relocation (McAlpine, 2012), their career satisfaction (Van der Weijden et al., 2016), their career practices (Müller, 2014), and their roles, functions and career prospects (Åkerlind, 2005). These studies mainly show the struggles and anxieties that postdocs experience. Inspired by Critical Management Studies, we take a different approach by moving away from the individual to the power-laden system that produces the demands and criteria for postdocs. This evokes questions as to how inequalities in the academic workforce are produced by the projectification of academia, who are in the position to construct the criteria and the demands for postdocs, and what does the temporary nature of positions means for the criteria concerning postdoc candidates? In order to answer these questions we provide a critical analysis on the recruitment and selection of postdocs, as this is the power process in which the ideal candidate is constructed. We take into account disciplinary differences, as we learn from previous studies that the proportion of postdocs varies by discipline (Ackers & Oliver, 2007; Nerad & Cerny, 1999). For example, in STEM the postdoc position is a necessary step on the academic career ladder whereas in SSH this is more rare, however, the number of postdoc positions in this field is growing (Bessudnov et al., 2015).

1.2. The ideal academic

Previous studies on academic staff evaluation have shown that when individuals involved in academic recruitment and selection talk about their preferred candidate, they reproduce the profile of the ideal academic (Bleijenbergh, Van Engen, & Vinkenburgh, 2013; Van Arensbergen, 2014; Van den Brink & Benschop, 2012a). This profile reflects the norm of the ideal academic as “someone who gives total priority to work and has no outside interests and responsibilities” (Bailyn, 2003, p. 139) and as “a lone, independent individual, who is self-protective, competitive, ruthless and not that collegiate or supportive of colleagues and students” (Bleijenbergh et al., 2013, p. 24).

Furthermore, academic power relations influence who gets to construct the ideal academic. Studies on the notion of the ideal academic also revealed that this ideal operates as both an inclusionary and an exclusionary mechanism (e.g., Bleijenbergh et al., 2013; Lund, 2012; Thornton, 2013; Van den Brink & Benschop, 2012b). These studies show for instance how the ideal academic is gendered; the constructed ideal encompasses masculine characteristics and therefore women academics are expected not to fit the ideal. In this study we will examine how principal investigators include or exclude researchers from the ideal norm, focusing on postdoc positions.

We perceive limitations in this literature on the ideal academic. First, existing studies tend to relate the ideal academic to senior (tenured, core) academics but not precarious (peripheral) academics such as postdocs. Generally, the ideal academic is constructed as an academic with a long track record of publications and external funding, which does not fit the career stage of early-career researchers. Second, most studies on the ideal academic treat this norm as similar across disciplines and across academic positions. An exception is the study of Bleijenbergh et al. (2013) who found that the image of the ideal academic is heterogeneous over academic disciplines and universities. Furthermore, Thunnissen and Van Arensbergen (2015), who took a broader look at academic evaluation by focusing on the definition of talent of academics at the early stages, found that the interpretation of academic talent – which we use here interchangeably with the ideal academic – depends on the position (i.e., senior academic or early-career talent) of the person being asked as well as academic discipline. However, no study to date has examined if the ideal academic is constructed differently when it concerns precarious project-based positions. Given the different nature of peripheral postdoc positions compared to core academic positions we examine if and how the ideal postdoc is distinct from the ideal academic.

1.3. Recruiting and selecting academics

The recruitment and selection of talent are considered key tasks of Human Resource Management (Ferris & King, 1991). Recruitment is the process concerned with identifying and attracting suitable candidates (Newell, 2005) and selection is the process of choosing one candidate out of the pool of candidates based on specific criteria and based on the ‘fit’ between the individual and the job (Newell, 2005). Therefore, these two HR functions are considerably different (Orlitzky, 2008). However, in academia, the role of HR professionals in recruitment and selection is relatively small (Fardale & Hope-Hailey, 2009). Thunnissen and Van Arensbergen (2015, p. 187) argue that this is because “managing academics, e.g. full professors, still consider themselves responsible and best equipped for selecting and managing their academic staff, and they accept little or no interference”.

Studies on academic staff evaluation have noted various relevant processes that make both recruiting and selecting opaque endeavours. An example of such opaqueness that can take place in recruitment is the process of scouting in which “applicants are actively invited to apply through the formal or informal networks which occur in closed – but also in some open – recruitment” (Van den Brink, 2010, p. 115). Scouting practices are performed by gatekeepers, who play an

important role in deciding who get access to academic positions and who are excluded (Husu, 2004) as gatekeepers generally occupy power positions in universities (Van den Brink & Benschop, 2014). Power and political processes play a role during the selection (Bozionelos, 2005; Ferris & King, 1991) such as group dynamics among selection decision makers (Van Arensbergen, Van der Weijden, & Van den Besselaar, 2014) and favouring candidates according to one’s own interests (Bozionelos, 2005). The majority of studies that look at the recruitment and selection of academics have focused on senior academic positions (e.g., Nielsen, 2015; Van den Brink & Benschop, 2012b) or Vice-Chancellors (Engwall, 2014) and longer-term appointments such as professorships. We do not yet know how academics are recruited and selected for project-based work. With this study we want to further the knowledge on academic recruitment and selection processes by studying how these processes are organised for precarious postdoc positions.

2. Methodology

2.1. Data collection

This research study used a qualitative multiple-case study approach. This approach allows us to compare the recruitment and selection criteria for postdocs as well as the researchers deemed ideal for postdoc positions between four national contexts. The data for this article were collected in collaboration with research teams in four public funded universities in Belgium (BE), Italy (IT), Switzerland (CH), and the Netherlands (NL). These universities’ main tasks are both research and teaching. All four research teams conducted two case studies in their institution: one in a Social Sciences and Humanities (SSH) department and one in a Science, Technology, Engineering, and Mathematics (STEM) department. Our comparative analysis is based on research reports that were written by the four research teams. Each team wrote two research reports that centred on recruitment and selection of early-career researchers in their respective institutions (for the first research reports see: Herschberg, Benschop, & Van den Brink, 2015). The second research reports are not published online in full). The research reports were based on various data sources. Firstly, the data consisted of documents such as university policy documents, HR documents, job-postings, and appointment reports, published in the period 2010–2014. The four research teams collected these documents in their universities. Secondly, every research team conducted semi-structured interviews with selection committee members who took part in the recruitment and selection of early-career researchers (postdoc and assistant professor positions) in the period 2010–2014. The research reports written by the four research teams consisted of a total of 67 interviews.

For this article we used a subsample of 21 interviews with 11 men and 10 women principal investigators who took part in the recruitment and selection of postdocs. As the focus of this study is on the hiring of postdocs we did not include interviews with respondents who had solely been on committees involved in the hiring of assistant professors. Respondents held associate professor, full professor or senior lecturer positions. Their names were retrieved from appointment reports and job postings (if available) and with help from university administrators. Principal investigators that were interviewed had acquired external research funding mainly from national and international research funding institutions. In some cases, respondents had applied for (and received) project funding in a team of researchers. The number of interviews used in this article is equally divided over the participating countries and departments. To ensure comparability, every team used the same interview guide for the interviews, which consisted of three themes: selection criteria for postdocs, a selection process in which the respondent had taken part, and departments’ policies regarding recruitment and selection of early-career researchers. The majority of the interviews were conducted in the local languages of the various research teams and some interviews were conducted in English. Each

interview lasted between one and two hours. Interviews were recorded with respondents' permission and transcribed verbatim in order for the research teams to analyse the transcripts in depth and write the research reports.

Because most interviews were conducted in the local languages of the research teams, we could not draw on the original interview transcripts. Instead, every research team (except the team of which the authors are part) made summaries in English of all interviews they had conducted. These summaries were written to provide the authors with primary data to strengthen the analysis. We had prepared guidelines for the research teams on what to include in the summaries for consistency across countries. The summaries consisted of four themes: information about the respondent (sex, department), selection criteria considered important, organisation of the selection process, and gender policies in recruitment and selection. Finally, the research teams provided quotes they thought reflected the interview responses best. These quotes were in addition to the quotes provided in the research reports.

2.2. Data analysis

We conducted a qualitative conventional content analysis (Hsieh & Shannon, 2005). We first open coded the materials and focused on the excerpts involving the recruitment and selection of postdocs. This resulted in codes that capture key concepts such as open/closed recruitment, selection, committee, networks, criteria, qualifications, candidates, procedure, policy, and scouting. At the same time we made notes of our "first impressions, thoughts, and initial analysis" (Hsieh & Shannon, 2005, p. 1279). At this step of the analysis we found the recruitment process and the selection process of postdocs to be distinct (in line with Orliutzky (2008) who argued that recruitment and selection are two different processes). At all times the research reports from the four countries were compared. The codes related to recruitment and the codes related to selection were then "sorted into categories based on how different codes are related" (Hsieh & Shannon, 2005, p. 1279). This led to two categories associated with the recruitment process (in charge of postdoc recruitment and the role of networks) and four categories associated with the selection process (criteria of expert knowledge, availability, commitment and motivation, and autonomy). The analysis revealed what the ideal postdoc looks like to our respondents. Repeatedly, we went back to the original research reports as well as the interview summaries to get additional information needed for our analysis. Our findings are illustrated with quotes from the interviews. Quotes were translated into English by the respective research teams who conducted the interviews.

In the remaining part of the article we will use country names instead of the names of the participating institutions to facilitate reading. For example, when we refer to Switzerland, we refer to the participating institution in Switzerland. Also, we will use the terminology 'SSH department' and 'STEM department' when corresponding to the various departments in the four universities.

2.3. Research context

Precarious early-career researchers in all countries in this study experience high job insecurity, a constant need to search for a new position and repeated short-term contracts. None of the universities have the obligation to prolong contracts or make them permanent at the end of their terms. However, the way postdocs are hired and the level of precarity of the position differ across the countries.

In the Italian university postdoc positions are funded by external research grants. Such postdoctoral research fellowships are considered student positions, so when a fellowship ends the researcher is not entitled to unemployment benefits. Also, they are excluded from income support measures because they have a student status. Formal policy prescribes that the recruitment procedure for postdocs entails the publication of an open call and then a selection by a committee

consisting of three tenured members of the department. The chair of the committee is the person in charge of the research grant.

The Swiss university distinguishes two types of postdoc positions: positions funded by research funding organisations and postdocs funded by the university. Externally funded project-based postdoc positions are part of the so-called "administrative and technical staff", which is originally a non-academic staff category. Because they are not part of the academic staff category, externally funded postdocs do not have representatives in faculty and university bodies. Therefore, it is more difficult for these postdocs to participate in and get informed about the strategic and scientific decisions taken by the academic bodies of the faculties, which puts them in a more precarious position than researchers in the academic staff category. For positions funded through external grants, which is often the case for postdoc positions, the directive states that: "No selection committee needs to be established. It is the responsibility of the person in charge of the funding to propose the hiring of a suitable candidate".

In the Dutch university, postdocs receive a university employment contract and therefore they fall under the collective labour agreement for Dutch universities. In the Netherlands a new law implemented in 2015 prescribes that academic staff cannot get more than three consecutive temporary contracts. The total period of temporary employment cannot exceed four years (this used to be six years). As a result, academics on temporary positions, also academics who attract external funding, are not able to renew their contract in their current university when they reach the four years of employment. Given the current financial structure of universities, this law will most likely increase precarity, as universities are often not willing to turn fixed-term positions into permanent ones.

In the Belgian university, postdoc positions are conceived as bursaries or scholarships and therefore lack social security and pension scheme contributions. In both the Belgian and the Dutch university the recruitment and selection processes for postdocs are not formalized. External research funding finances postdoc positions and it is the grant holder(s) who make(s) the selection decision. Postdocs are sometimes recruited via an open call and with the use of a selection committee, but in many cases there is no open selection procedure and no selection committee.

3. Research findings

In this section we first illustrate the process of recruiting postdocs. Second, we show how principal investigators (PIs) involved in postdoc selection construct the ideal postdoc by examining the criteria used for selecting postdocs.

3.1. The recruitment process

We identified two patterns in the recruitment process across countries and disciplines: the dominant power position of the PI in the process and the use of informal networks in recruiting postdocs.

3.1.1. In charge of postdoc recruitment

In all four countries, postdoc positions are predominantly financed by external research grants, with an exception of some of the postdoc positions in Switzerland (see also Research context). In this study, we refer to postdoc positions originating from external research grants that are acquired by PIs. Consequently, postdocs are recruited to conduct these projects, as a Dutch respondent explains:

Postdocs and PhD students, they are being paid by projects. People apply for those projects. Those projects are in fact sort of the property of those people and thus they can decide who will be the PhD student or postdoc. (NL, STEM, M)

This quote shows that the respondent considers a project financed through external funding the "property" of the grant holder(s). He

argues that because of this, the PI decides whom to recruit on a PhD or postdoc position, implying that a formal procedure for the recruitment of postdocs is unnecessary. This way, PIs do not have to spend considerable time doing administrative tasks that recruitment procedures usually require.

In all countries, we find that the decision-making power regarding recruitment lies with the person who obtained the research funding, also in Italy where a formal hiring committee is composed. In Italy, committee members other than the PI perform more of an advisory role. Therefore, obtaining external funding not only grants PIs the opportunity to conduct their own research but also grants them power to build research groups composed of early-career researchers that they solely hire. This is consistent with postdoc hiring in the UK and the US (Cantwell, 2011).

Compared to other early-career positions such as tenure-track positions, the hiring of postdoc candidates provides PIs with a large amount of autonomy. Our analysis shows that in all countries postdoc hiring happens at the discretion of PIs, and they are hardly held accountable for their hiring decisions. They do not have to formally report on their decisions that therefore remain unquestioned. As a result, individual PIs decide on who enter and / or remain in the academic system and who are excluded.

3.1.2. The role of networks

Our analysis shows that respondents in all four universities agreed that the most widely used way to recruit postdocs is through informal networks. Also when an open call is published, such as in Italy, informal channels are used to recruit candidates. In all countries, local or international collegial networks are used to get direct access to candidates, to distribute vacancies, and to obtain information and judgments on the quality of candidates.

The fact that most countries do not have a formal procedure installed for the recruitment of postdocs might facilitate the reliance on networks, but our analysis also reveals other reasons for informal recruitment practices. One of these reasons is the time pressure that PIs experience for assembling a project team. This is because research projects usually come with a starting date and an end date. PIs explain that therefore they need postdocs whom they can employ for that period of time and in most cases, they need postdocs who can start at short notice. This limits their possibility for an extensive recruitment process and triggers the dependence on informal networks as these networks can quickly provide information on and access to possible candidates. This differs from non-project positions for which the recruitment and selection can take up to a number of years (Herschberg, Benschop, & Van den Brink, 2016). The focus of PIs tends to be on the short-term because of project-based hiring, yet, their decisions have long-term consequences for science.

The second reason for recruiting postdocs informally is respondents' preference for candidates whom they already know compared to unknown candidates. Our analysis shows that this argument holds throughout the four countries.

If it's someone you know, someone who you know works hard, is easy to get on with and so on, I won't say you hire him [sic] without question, but if something is needed to make a difference when two applications seem equally good, I think it can be important all the same (CH, SSH, F).

This quote reveals the benefits of selecting a candidate already familiar to the PI: it is known if the candidate "works hard" and "is easy to get on with". The respondent argues that this can be decisive if two candidates "seem equally good". An Italian respondent reveals his inclination to hire candidates that he knows and appreciates. We learn from him that his preference for "someone you know" creates a closed "competition" and puts unknown candidates at a disadvantage (IT, SSH, M). Italian PIs often tailor the vacancy profile to the candidate recruited informally. Here we find that formal policy that requires an open

competition for postdoc positions can partly be circumvented. Our findings show that despite the ostensible openness of published vacancies, access to a position is generally restricted to people benefiting from a local gatekeeper or network connection outside the department.

Thirdly, we find that informal networks are used for acquiring recommendations from network connections, which can play an important role in the recruitment of postdocs. A Swiss respondent argues: *It's true that word of mouth, a telephone call, is shall we say, compared to impact factor, is much, much more important* (CH, STEM, M). This quote shows the impact of "word of mouth" recruitment through informal channels. According to the respondent, a reference from another person is "much, much more important" than a journal "impact factor", illustrating the use of referees for the legitimation of a candidate's scholarship (Thornton, 2013). This reveals the power of networks and the trust PIs have in their network connections.

3.2. The selection of postdocs

In this section we show how the selection of postdocs takes place, as this is the process in which the ideal postdoc is constructed. Most respondents in the various universities and departments argue that they require postdocs to have published a (small) number of articles, mainly looking whether or not the content of these publications matches the topic of the research project they are hiring for. However, our analysis shows that there are other, more decisive, criteria that play a role in the selection of postdocs. We will now turn to these criteria that together construct the ideal academic.

3.2.1. The criterion of expert knowledge

The first selection criterion that PIs consider important is related to the content of the research project at hand.

In the case of our postdocs, there are some difficulties that persist. Let's say that we think a bit egoistically, we have obtained the funding and now we need to find someone who can do this, and assuredly do it. (BE, SSH, M)

The respondent argues that he needs a postdoc who can carry out the project that he obtained funding for. Yet, he emphasises that he looks for a postdoc who can "assuredly do it". Here we see that project conditions shape the requirement for a postdoc who can successfully execute the project. Our analysis shows that expert knowledge is a core criterion that PIs throughout the countries apply in order to increase the chance for a successful completion of the project. Respondents refer to this as "scientific technical expertise", "particular skills", or "a certain competence in the research commissioned". There is consensus among PIs in all countries that they consider it important that a postdoc candidate has experience with the research topic and the necessary expertise to conduct and complete the research project successfully.

3.2.2. The criterion of availability

Illustrated by the discussion of the role of networks, PIs throughout the countries are looking for candidates who are available for the project's duration. This creates another condition for criteria applied in the selection of postdocs. A Swiss respondent argues that his strategy is to hire a person "who can start immediately [on the first day of the project], who will be good for the project but perhaps not super-brilliant, not top class" (CH, STEM, M). He then further explained that hiring a postdoc on a research grant obliges him to make compromises, as the project has its own timetable. Moreover, this respondent explained that his preference for hiring a "not super-brilliant" candidate is because he expects them to have a higher chance of staying for the entire project duration. He argued that "top class" candidates are more inclined to receive a better offer in another institution and therefore leave during the course of the project. It seems that he anticipates the counter-power of top class candidates, who might leave during the project for less precarious career options. Our analysis reveals that PIs in all countries want to hire

candidates who are available when the project starts, which can cause them to opt for low(er) risk candidates who can meet project objectives. Thus, they seem willing to sacrifice quality for availability.

3.2.3. The criteria of commitment and motivation

Our analysis reveals that commitment to the project and its duration is an important factor in the selection of postdocs too. Belgian respondents explain that this also requires a willingness to stay in Belgium for the duration of the postdoctoral contract. An Italian respondent argues: “*The fellowships are tied to specific projects. So that what we consider is availability and commitment for this period, not for a longer one*” (IT, STEM, M). This quote touches upon one of the precarities inherent to postdoc positions: the appointment for a fixed-term period. Positions funded by projects can generally only offer fixed-term employment. Therefore, the investment from both the side of the employer and the employee is only for a limited time, which causes PIs to particularly focus on short-term objectives rather than a candidate’s suitability and quality for a longer-term academic career. Our findings reveal that this induces PIs throughout the various countries to focus more on criteria related to project execution than job content because a flawless process reduces the risk of project failure. This illustrates once more how the need for a successful completion of the project shapes selection criteria.

Also, respondents in the various countries argue that a candidate’s motivation is important in the selection process. A Dutch respondent illustrates: “*I really like a kind of intrinsic motivation. I want to work with people who are happy to be paid for studying something they already wanted to know*” (NL, SSH, F). This respondent, but also respondents from other countries, argue that they assess a candidate’s motivation on the research topic of the project. They indicate that this can demonstrate if a candidate is really interested in the content. Similar to commitment, this implies that PIs aim for selecting a candidate who has a high chance of completing the project and therefore they want to hire a postdoc who is motivated to do the project.

3.2.4. The criterion of autonomy

The need for a smooth execution of the project also generates the criterion of autonomy. Respondents in all four countries argue that they want to hire postdocs who are quickly operational when the project starts because “*projects have to be carried out with the promised results or outcomes*” (NL, STEM, M). We find that because of this, most respondents in the four countries look for candidates who are capable of independent research, who do not need too much support.

Other more general competences are autonomy at work. [...] Autonomy that involves both the development of the specific question to be researched, developed, and then to bring it to a publication, because by now this is what we do. What is needed is a very output oriented person, most of all if s/he must work in projects. (IT, SSH, F)

The respondent argues that autonomous work behaviour is a selection criterion because she requires that postdocs independently develop research questions and write publications. She refers to the importance for postdocs of producing publications. Also in the other countries postdocs are expected to conduct research independently and to publish based on the project’s findings. Respondents argue that they want to work with postdocs who take initiative and develop their own ideas. We find that the output orientation of the PI and the need for project realisation are the main drivers of the requirement for autonomous work behaviour. However, a Dutch respondent argues that she wants to hire postdocs who have their own input in the project but at the same time “*do what you want them to do*” (NL, SSH, F). This reveals a limit to the amount of autonomy postdocs should demonstrate because the research projects steer them in a certain direction, which can constrain their initiative. We analyse this as a power process in which the interests of the PI, who has the final responsibility for the project, may

or may not parallel the interests of the postdocs who can pursue their own agenda in publishing and building a research line.

3.3. The ideal postdoc versus the ideal academic

As we have illustrated, the selection criteria applied in the selection process for postdoc positions are tailored to the project nature of such positions. The ideal postdoc is constructed as someone who is available during the timescale of the project, committed and motivated to conduct the research till completion, and has both the expert knowledge and independence to execute the project. We see these criteria being applied in all countries and disciplines involved in this study.

The following quote from an Italian respondent encapsulates the core distinction between an ideal postdoc and an ideal assistant professor, but also reveals the precariousness of postdoc positions:

In the case of a postdoc, the requirement may be less general and more circumscribed: I need someone to give me a hand with a project. I mean, the competence of a postdoc may be more restricted than that of an [assistant professor] without causing serious damage. Therefore, we may say that there is greater discretion and a focus on a specific research project in the case of a postdoc, while in that of an [assistant professor] the need to be met is development of the discipline. If an [assistant professor] is a universal, so to speak, need of the discipline, a postdoc is a specific need of a project. (IT, SSH, M)

This PI explains that postdocs need to conduct “*a specific research project*” and therefore the criteria are more limited whereas assistant professors are hired for the “*development of the discipline*” and are therefore selected based on a larger variety of criteria. Thus, we find a narrow short-term construction of the ideal postdoc, which is in sharp contrast to more senior positions that play a significant role in the long-term development of their discipline.

4. Discussion and conclusion

This study aimed at providing a better understanding of the recruitment and selection of precarious postdocs in the context of the neoliberalisation and projectification of academia.

The first contribution of this article is to the literature on academic staff evaluation in the neoliberal university, extending to the recruitment and selection of postdocs instead of senior academics (e.g., Nielsen, 2015; Van den Brink & Benschop, 2012b). Postdocs are a unique and understudied group, because they are hired for fixed-term projects rather than on more stable, senior academic positions. This study shows how recruitment for project-based temporary academic positions in higher education institutions is organised in a hasty and informal manner and how selection criteria for postdoc positions are shaped. We noticed that in universities in four European countries the recruitment and selection processes in the Natural Sciences (STEM) are led by the same conventions as in the Social Sciences (SSH) departments. We show that the ideal postdoc differs from the ideal academic, as the ideal postdoc is very much shaped by the need for a candidate who can successfully execute and complete a short-term project. Although academic fields vary in their core activities, financial resources, career patterns, epistemological issues and publishing strategies (Becher & Trowler, 2001), we found little variation between disciplines and countries in the construction of the ideal postdoc. This shows dominant patterns in the contemporary international academic system on the way postdocs are perceived and the role they (should) play in the academy. An explanation for the similarities across disciplines might be because “disciplinary differences have become increasingly blurred” (p. 8) as a result of the projectification in universities (Ylijoki, 2016).

Our second contribution to the literature consists of the identification of three manifestations of precarity and their effects for postdocs and the quality of knowledge production in public funded higher

education institutions. For analytical purposes, we will disentangle three manifestations of precarity, but stress that this is an analytical distinction as in practice there is some overlap.

The first manifestation of precarity we distil from our findings relates to the control over projects. Our analysis shows that the academic system allows PIs exclusive control over recruitment and selection processes as project funding is considered their property. The lack of transparency and accountability in postdoc recruitment and selection raises questions about the fairness of these hiring practices as often no open competition is enabled. Because of the lack of interference from others, most of the postdoc hiring happens informally, with a strong reliance on network connections. Network-based recruitment is used for most academic appointments (e.g., Nielsen, 2015; Van den Brink & Benschop, 2014), but not to the same extent as for postdoc positions. A possible effect of the high amount of control of PIs over the recruitment and selection processes might be that candidates outside the PIs network are excluded from postdoc positions. Without formal procedures and colleagues joining the recruitment and selection processes, a PI's interest can prevail over the interests of the postdocs. Project-based work also makes that PIs have control over the content of the research a postdoc should undertake (Harney et al., 2014). Yet, our findings show that PIs depend on the postdocs for project success and scientific output, which provides postdocs with potential counter-power as they may leave during the project or may pursue an autonomous agenda.

The second manifestation of precarity concerns contracts. Postdocs are generally hired on precarious short-term contracts, with little or no prospects for continued employment (Oliver, 2012). In addition, they usually hold a peripheral position compared to core staff. We found that projects require from postdoc candidates expert knowledge, availability, commitment and motivation, and autonomy, as this facilitates the successful completion of a PI's project. The short duration of projects triggers short-term interests when it comes to decision-making in recruitment and selection of postdocs, not taking into account how this short-term vision affects the careers of these postdocs. When it comes to contracts, we observe some national differences, as in the Italian, Belgian and Swiss institutions, project-funded postdocs do not hold the same contractual position as academic staff on more stable positions as is the case in the Netherlands. In Italy and Belgium, postdocs are even denied employment benefits and social security, which creates a particularly precarious situation for them. Postdocs are thus expected to demonstrate loyalty and commitment to the project, but they seem to receive little or no reciprocity for their investment and dedication. Despite postdocs' considerable contributions to academic knowledge production (Van der Weijden et al., 2016) they suffer from bad employment conditions and low social and job security.

The third and final manifestation of precarity pertains to careers. The neoliberalisation and projectification of academia have shifted the responsibility for career development from employers to early-career researchers. Yet, this is a responsibility that is very difficult or even impossible to bear for precarious postdocs, as the system does not provide sufficient opportunities for development and progression (Åkerlind, 2005; Horta, 2009). Given that the postdoc phase was intended as a “transitional period during which the postdoc develops independence” (Callier & Polka, 2015, p. 155), the current system does not seem to give room to do so. Our study shows that externally funded postdoc positions instigate a strong project focus and, therefore, PIs tend to select an ‘ideal’ type postdoc who is value-added to a project, rather than someone who they evaluate from a broader perspective, as someone who is deemed suitable for a further career in academia. As a result, the postdoc position seems to have become a job, rather than a career step. So even though postdocs tend to “depend on their professors for career support in return for their cooperative efforts” (Lam & de Campos, 2015, p. 820), “securing the occupational future will require a high degree of initiative on [postdocs'] part” (Allen-Collinson, 2003, p. 411, see also Teelken & Van der Weijden, 2018), or so called entrepreneurial behaviour (Hakala, 2009). When early-career

researchers work on series of fixed-term postdoc contracts and thus various projects (Ylijoki, 2016), they might end up with a scattered research line instead of an independently developed, coherent research line that is required for a next – more stable – position. The effect of this precarity manifestation is a different ideal candidate for postdoc positions compared to more stable academic positions. This current short-term orientation might not be sustainable on the long run, for both the careers of postdocs and the quality of knowledge production in academia.

We conclude that the projectification of early academic positions resulted in recruitment and selection practices that focus on short-term objectives. This reveals a sharp contrast with the emphasis on academic excellence and talent that dominates the debate on the neoliberal academy (e.g., Butler & Spoelstra, 2012) and academic evaluation and hiring decisions (Herschberg, Benschop, & Van den Brink, 2018; O'Connor & O'Hagan, 2015; Van Arensbergen, Van der Weijden, & Van den Besselaar, 2014; Van den Brink & Benschop, 2012b). Our study shows that the increase in externally funded postdoc positions can lead to an erosion of the notion of talent. PIs tend to look for good project workers rather than the best talented academics; so to speak sheep with three legs instead of ‘sheep with five legs’ (i.e., ‘excellent in all respects’) such as for professorships (Van den Brink & Benschop, 2012b, p. 512; Van den Brink & Benschop, 2012b; Van den Brink & Benschop, 2012b, p. 512). According to the idiomatic expression, sheep with three legs will be able to ‘walk’ (i.e., perform sufficiently well in the project) but will not run away, which makes us question the attractiveness of postdoc positions for early-career researchers in the current system.

The practical implications of our study are that HR should be more closely involved in the recruitment and selection of postdocs to make sure that the short-term myopia of PIs is mitigated and a broader spectrum of criteria is taken into account to select the academics of the future. Implementing formal recruitment and selection policies for postdoc positions that require open recruitment of postdocs, can eliminate biases inherent in closed recruitment. More formalized recruitment and selection could also prescribe that PIs should form a hiring committee to ensure that PIs are not solely responsible for the hiring. Furthermore, universities should give more content to their responsibility for the career opportunities of postdocs both within and outside the academic world (cf. Teelken & Van der Weijden, 2018)

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