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## **Introduction**

The distribution of funding for scientific research has changed over the past decades due to an increasing governmental involvement in the governance of research and innovation (Glaser & Laudel, 2016). This has resulted in the introduction of performance-based and competitive project funding mechanisms (Auranen & Nieminen, 2010) and had a differentiating effect on the distribution of research funding across universities, departments and individual researchers (Masso & Ukrainski, 2009). The competitive distribution of research funding leads to concentration due to the Matthew effect (Merton, 1968), which is strengthened on the organizational level by the increase of grant size aimed at creating critical mass at a select number of organisations (Bloch & Sørensen, 2015). Consequently, the social structure of some research groups has changed due to the influx of a large number of PhD-students and other temporary staff members. For all researchers it has increased time spent on grant proposal writing and an administrative burden to provide increasingly detailed information on output activities for these grant applications as well as formal evaluations (De Rijcke et al., 2015).

Previous research on the effect of the rise of project funding points to a range of detrimental effects on the science system as a whole, including increasing short-term employment, hyper-competition, and the narrowing of valuation regimes (Fochler, Felt & Müller, 2016) as well as increasing anxiety and career uncertainty (Sigl, 2016) - especially among early career researchers. However, an understanding of the mechanisms through which project funding changes the social structure of individual research groups is missing.

In this chapter we analyse the mechanisms through which negative consequences of project funding come about, building on the existing literature and an in-depth case study of a, in terms of project funding, particularly successful research group in the social sciences. We focus on the structural effects of the rise of temporary positions due to incoming project funding, and on the experiences of early career researchers in such temporary positions.

In the last section we discuss a response of senior staff members that try to counter the individuating force (Knorr-Cetina, 1999) of project funding by promoting communitarian values in hiring committees. While such a response is useful and necessary to establish the research group as a community, it also introduces another set of demands to the already long list of what early career researchers are expected to do. This suggests that communitarian ideals are not straightforwardly positive (Stöckelová, 2014), as communitarian demands can be circumvented by obtaining a project grant. This increases the inequality of expectations between those with project grants and those without. We conclude that because of the structural nature of the mechanisms we describe, individual research groups will be unlikely to be able to solve these problems and a more radical shift in the distribution of research funding is necessary.

### The effects of project funding: A model

In this chapter we present an in-depth case study of a Dutch research group in a social science discipline. By combining our empirical analysis with prior research on the effects of funding, we aim to develop a model of the effects of the rise of project funding on the social structure of research groups. In figure 4.1 we present our model and in the following sections we will take the reader through each element of the model as well as explain the relations (the arrows) between each element. Our aim, and contribution to the literature, is to analytically and empirically clarify these relations and their underlying mechanisms.

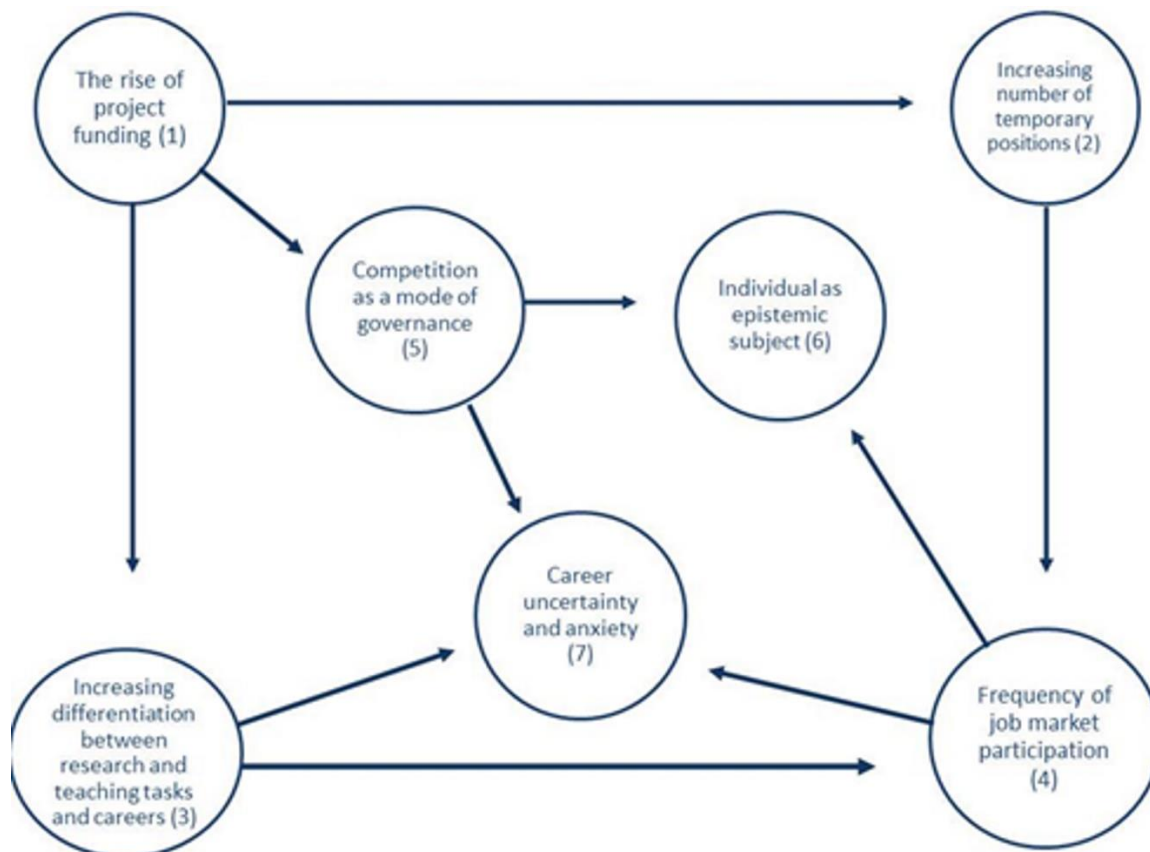


Figure 4.1: Model of the effects of the rise of project funding

To summarize the model, we argue that the rise of project funding (1) has increased the number of temporary positions (2) as well as the length of the temporary career phase. The increase of temporary positions means that the frequency with which early career scholars participate in the job market (4) increases drastically. This is heightened by the increasing differentiation between research and teaching tasks (3) and research intensive and teaching intensive career scripts and trajectories, which push early career scholars to try to increase their research time continuously.

The rise of project funding (1) also introduces competitions for funding as a mode of governance (5). With this we point not just to the rise of competitive behaviour but specifically to the outsourcing of epistemic authority (that is the authority over what kind of research is being done and who becomes part of the research group) to funding bodies that effectively determine whether or not an early career researcher gets a position (through granting someone a project grant).

Both job market participation (4) and project funding competition (5) establish and reaffirm the individual as the primary epistemic subject (6) in the science system. We show that early career researchers think about the science system in individualized terms that highlight their CV, grants and publications and pushes them towards entrepreneurial behaviour.

The differentiation between teaching and research (3), the frequency of job market participation (4) and the competition for project funding (5) as a means to secure a position all increase career uncertainty and anxiety (7) as early career researchers do not know what is enough to secure a permanent academic position.

## **Project funding and the social structure of a research group**

### *The rise of project funding (1): The Dutch situation*

In OECD countries, science funding has changed considerably over the last decades. Most importantly, there has been a rise in project funding which shifted control over large amounts of research funds towards funding agencies (Auranen & Nieminen, 2010) that distribute these funds across groups or individuals. The distribution of funds usually takes place through a competitive selection procedure for which scholars have to apply by writing a project proposal (however see Franssen et al., 2018 on prize funding). Project proposals are reviewed by either employees of the funding organization or, as is much more usual, through a peer review committee that also draws on external peer reviews of individual project proposals (e.g. Luukkonen, 2012; Glaser & Laudel, 2016, pp. 122–125 for an overview of the literature).

In the Dutch higher education system, project funding is part of a three-tier funding system (see Koier et al., 2016 for a detailed description). The first flow, from the Ministry of Education, Culture and Science is traditionally the largest. The first funding flow is composed of a student-dependent and a student-independent part and is allocated by the Ministry to the university. The university divides these funds across faculties. In both the allocation mechanism used by the Ministry and those used by universities, natural and life science disciplines are systemically prioritized over social science and humanities disciplines due to historical developed differences. The second component, the student-dependent factor, is based on student numbers and includes

not only funding for teaching but also some additional research funding. This means that in social scientific disciplines in the Netherlands, more than among natural and life science disciplines, research time and staff are linked to student numbers.

The second flow is research funding distributed through the Netherlands Organization for Scientific Research (NWO) and the European Committee (currently Horizon 2020). As noted above, this funding flow has become more important over the past decades and is also the main focus in our case. It is important to note that funding through the second flow needs to be 'matched' by universities. The matching funds are relocated from the first flow and therefore diminish the funds available for research from the first flow even further (Koier et al., 2016).

Next to individual and group-based project funding that is distributed through funding agencies, additional competitive funding mechanisms have been introduced at the university and faculty level (Versleijen et al., 2007). On these levels the allocation of research funds from the first flow is increasingly based on past performance or, again, open competition. Examples of this phenomenon are university-wide research priority areas, additional funding for 'excellent' institutes or graduate schools, or competitions within research institutes for project funding.

The third flow funds are acquired through contract research for private partners and (non-)governmental organizations that operate in the public domain. For the department under study this was a major source of funding in the 1990s and early 2000s but its importance has declined over the last 10 years.

### *The rise of temporary positions (2)*

#### *The case*

The research group we studied is part of a prominent social science department of a major Dutch university. We selected this research group because of its success in acquiring project funding. Between 2009 and 2015 members of the group obtained 7 individual grants from NWO or the ERC, participated in a number of Horizon 2020 projects and obtained additional funding for PhD-students through competitive individual PhD-funding programs and funding assigned to the institute or graduate school as part of different 'excellence' initiatives.

We conducted interviews with 17 group members and one junior research manager. We interviewed the group's professor at the start and the end of the project. Also, we were given the opportunity to observe research seminars and group meetings on a number of occasions. At one of the meetings we presented our research as a 'member check'. At the time of conducting the research project (November 2014 – May 2015), great upheaval characterized Dutch academia as the building housing the central board of one of the universities was occupied by students and faculty (Blaustein, 2015). This gave great urgency to the issues we were analyzing for the group members and other academics working in the Netherlands. Group members tended to reflect on the topic of research governance outside the context of interviews, for instance in faculty-wide email discussions. In some cases, these emails were publically available (sent out to a large number of staff or even university-wide) and we were able to collect them. We also collected other relevant documentation regarding the group.

### *The composition of the group*

At the time of analysis, the research group consisted of one professor, five associate professors, eight assistant professors, four postdocs and eight PhD-students. In addition, two lecturers without research time had permanent contracts in the department and were part of the group. The professor and associate professors had tenured contracts. Of the eight assistant professors, only three had a tenured contract and the others had contracts of approximately three years – without tenure or other form of extension. The postdocs had temporary contracts (often 1-3 years) while the PhD-students had three-year contracts.

The rise of project funding has resulted in a new composition of this research group around the group leader, who was PI of many of the external projects and supervisor of most PhD-students. This new structure resembles the natural science labs (e.g. Knorr-Cetina, 1999) but is a relative novelty in the social sciences. The size of the research group is a direct result of competitive funding as usually all or most temporary positions are funded externally. While PIs often have permanent or tenure-track positions, the much larger group of postdocs and PhD-students does not (Müller, 2012; 2014; Sigl, 2016). In this case all temporary staff (5 of the assistant professors, 4 postdocs, 8 PhD-students) were funded through external project funding, which created a large group of highly skilled, highly motivated early career researchers. Researchers on the associate level did have permanent contracts and had often been successful in acquiring project funding themselves.

The group leader was aware of the increase of temporary positions due to project funding and the difficulties temporary staff members experience. He explained:

**Group leader:** Someone who has a permanent contract can, first of all, probably hire a postdoc him or herself, a temporary person, and then we have the policy that a replacement must be found, but the teaching should not be done by a temporary lecturer so then an assistant professor for 4 or 5 years comes in, so you have two temporary members to be able to give a permanent staff member the possibility to, for a while, teach less, and that increases the dynamic because we succeed in bringing in good, talented people for these temporary positions.

**Interviewer:** A large temporary basis.

**Group Leader:** And I mean, we really cannot go in any direction, because there wasn't even a job to begin with. And that is in this whole discussion the rock hard message, because I understand the frustration and I see it, and at the same time, that we are having this conversation is because a temporary position has been created because of a grant, otherwise this conversation would not take place.

'There wasn't even a job to begin with', as the group leader explains, characterizes the contradiction inherent in the positions created through project funding. It is only first flow funding that provides continuous funds, provided that student numbers remain relatively stable, for permanent positions. All other funding creates temporary positions that will terminate after the funded project ends. However, as he notes, this dynamic is intensified because the people that come in on temporary positions themselves also acquire additional project funding. This cumulative effect of temporary positions acquiring new external funding is an effect that the

literature has not addressed in any detail yet. The rise of project funding implies that, because of the Matthew effect, funding becomes increasingly concentrated with certain individuals or groups. As such, temporary positions become equally concentrated and new temporary staff members acquire project funding of their own, thereby increasing concentration even further.

### *Increasing differentiation (3): Teaching intensive and research intensive career trajectories*

Contracts of staff members in social science disciplines in the Netherlands will typically consist of a 60 percent/40 percent time allocation between teaching and management on the one hand and research on the other. This means that a staff member will, based on a full time contract, have 1000 hours of teaching and 666 hours of research time.

Acquired project funding can be used by staff members to 'buy' themselves out of teaching, a common strategy in the social sciences. The buy-out is restricted in this particular research group, because staff members are not allowed to buy-out fully. However, taking into account managerial tasks and PhD supervision, senior staff members do not carry a large teaching load. The professor in the group was involved in one course in the academic year 2014-2015 (based on the online study guide of the university), and associate professors with grant funding also had a minimal teaching load. Consequently, there is a large teaching load that does not rest on the senior staff members.

The rise of project funding, and related the teaching buy-out in the social sciences, leads to increasing differentiation and specialization among university staff and to either teaching intensive or research intensive careers (Leisyte & Dee, 2012; Musselin, 2011). In this research group, and the institute at large, this was perceived as an unwelcome development that the institute aimed to counter. As such, there were only two lecturers with little to no research time in the department, and management had developed a strategy to deal with the potential separation between teaching and research staff. The organisational solution to this differentiation was the development of a new temporary position, the temporary assistant professor (TAP). This temporary position introduces a new hierarchical layer between the postdoc and assistant professor position and increases the length of the 'early career' phase in academia as characterized by temporary contracts. Where the assistant professor position traditionally was the start of the tenure track in the social sciences, this is no longer the case. These TAPs have contracts that themselves consist of 60 percent teaching and 40 percent research. TAPs cover the teaching load of senior staff members who used project funding for a buy-out. The development of the TAP showed an organisational commitment to the academic ideal of the intimate relation between research and teaching in the social sciences. However, as we will show below, this did not dissolve the tendency towards specialization, as project grants increasingly determine both research time and career trajectories of early career researchers. The TAP is therefore a temporary solution to extend the early career phase. However, scholars who are able to obtain a tenure track assistant professorship are primarily those who obtain more research time and project funding.

Crucially, early career researchers are increasingly socialized with a particular research intensive career script as the ideal career (Müller, 2012). The rise of project funding changes how researchers think about who has a right to research time. We find that early career researchers

have a fear of missing the boat of the research intensive career if they don't get particular grants that allow them to devote more time to research and publishing. The story of one TAP who was transitioning to a teaching intensive position shows how continuing a research intensive career is becoming increasingly limited to those researchers that can do research (and publish) in a particular, high paced, way.

**Elena:** I prefer to make sure something's really good. I think of high quality, theory-heavy slowly built papers. Slow has nothing to do with it, but it takes time to do that, I do not feel rushed to just try to crank out publications. But here, I felt that right away, and I was like "shit I am never going to catch up". It is sort of this vicious cycle too, because if you do not have enough papers you cannot get a grant, and then if you do not have a grant you cannot get data to get 27 papers out.

Elena explains later on that she does feel appreciated at the institute for her teaching skills and in general for her role in the group. In the social sciences the importance of teaching, compared to the life sciences, might prevent a narrowing of valuation regimes (Fochler, Felt & Müller, 2016, see the last section on communitarian values). However, what is important here is how she contrasts her abilities (doing theory-heavy slowly built papers) to the much faster paced (27 papers) research practices of those that are allowed to continue doing research as assistant professors in the Netherlands, and the importance of the cycle of publications-grant-data-publications they need to sustain for a research intensive career.

#### *Increasing frequency of job market participation (4)*

The rise of temporary positions, and the increasing length of the temporary career stage, force early career researchers onto the labour market much more often. The early career scholars in this research group all applied to the same internal positions for postdocs, temporary assistant professorships and tenure-track assistant professorships. This was often not to get an entirely new position, but rather to make their current position more research intensive. Below we quote a TAP and a postdoc who talk about their job history within the research group which gives a particular good insight in how 'patchworked' academic positions are becoming:

**David:** I had a lectureship for 4 days a week, 100% teaching. (...) After a while, I applied for research time. This was a policy that a number of lecturers could get 20% research time. I applied for that, and I got it. So after half a year, 9 months that I just taught, I got a contract in which I taught 3 days and did research on 1 day. After I had let them know a number of times I wanted to become an assistant professor (AP), and also applied for an AP 2 or 3 times without getting it, I finally got a contract in which I worked 5 days a week with 40% research time and 60% teaching. Then an official AP position came up and I applied for that, and for that, so since August I'm officially an [temporary] AP (...) If someone would leave



now who has a tenure-track contract as an AP, and if a job application procedure would arise, then I will apply for that and hope I get it.

**Danielle:** The postdoc is coming to an end. Last year there was a vacancy, a formal vacancy for an open rank. I applied for that to become AP, but I didn't get it, but I did get a lectureship [meaning a teaching-only position]. And then, last November there was a postdoc vacancy because of the research priority area, I applied for that as well. That consisted of 0.8 FTE research time, and they have split that between me and [name of temporary AP]. So we both got 0.4 FTE to do research within that project. (...) I will have 0.4 FTE teaching and 0.4 FTE research.

**Interviewer:** For how long?

**Danielle:** 2 years.

**Interviewer:** Okay, and when did that postdoc start?

**Danielle:** I am still working on the old postdoc.

**Interviewer:** You were hired as a lecturer but you have not yet taken that up?

**Danielle:** No I didn't. But that will be my official title. Lecturer, but with research time.

Project funding has introduced, through short-term contracts, a much greater sense of competition for early career researchers. As the quotes above show, early career researchers are constantly in competition. These experiences of competition also mark the moments where early career researchers feel evaluated. Danielle explains that the length of contracts prevents the yearly appraisal from being a significant moment:

**Danielle:** It [the yearly appraisal] has never really been relevant for me because my contracts were so short. Right after the yearly appraisal a new contract would start. For me the job application is the evaluation moment, not the yearly appraisal. I have another one coming up about my current post but after three months that will cease to exist, so I don't really care what the appraisal is about.

**Interviewer:** but you do feel you are being evaluated?

**Danielle:** Yes, in the job applications.

### *Competition as a mode of governance (5)*

Competition was not only a more recurrent phenomenon due to participation on the job market, but also because of the competition for project funding, increasingly, as a mode of governance (De Boer, Enders & Leisyte, 2007; Felt, 2009). That is, competition for project funding is increasingly a means to govern who becomes part of the research group, or more broadly speaking who is allowed to stay in academia by creating a job for oneself (Müller, 2014), or whose career progresses after the early career phase (Bloch, Graversen and Pedersen, 2014).

In our case, too, successful grant applications could be used by early career researchers to negotiate a position in the research group, possibly a tenure-track one (in case of large grants). One postdoc explains how grant applications increase her worth, in terms of her CV, and give her leverage towards the university to obtain a position:

**Interviewer:** How do you see funding applications, as a way to get a job somewhere? Or is it a way to create a job for yourself?

**Mags:** (...) If you get a Veni, and that's also what people tell me, then you're much more... You're WORTH more in academia, because “wow, you got that”. There is a lot of pressure of course involved in it. So, yeah, it's not only your money or you know, I guess people... I mean... Not in my position, but who actually have a job, or at least a contract for a bit longer, and don't get the Veni are also very much under pressure, because this is something that counts a lot. And this was something that someone from [project] in the first few months told me, that if you get that, you can have a good career here. It's very special.

**Interviewer:** If you would get it, the Veni, would you then become assistant professor?

**Mags:** That would be a condition yeah. (...) Then you're worth much more here, you offer something, and I understand that the university also... Yeah, basically, they are proud of having Veni-researchers. The [university] advertised it last summer: “this is how many of them we got” so this is a good thing for them.

The increasing importance of project funding as income to the university also means that the research group and group leader becomes increasingly important institutionally. Group leaders are nodes through which competitive project funding comes into the university (Edler et al., 2014; Whitley, 2014; Raudla et al., 2015). This means that high-performing group leaders can direct the course of research, through successful funding applications, to an increasingly large extent. Epistemic authority thus shifts in two ways; to funding bodies and to group or project leaders.

#### *Individuation: The individual as the primary epistemic subject (6)*

In being on the job and grant market, in competition with peers, the individual is constantly established and reproduced as the primary epistemic subject (Knorr-Cetina, 1999: 205). This individuating force, and the way early career scholars respond to it, calls to mind the process of individualization that characterizes late modernity (Beck, 1992; Beck & Beck-Gernsheim, 2002). Beck's individualization theory points to individualization as a process in which people learn to see themselves as ‘the centre of action’ (Beck, 1992: 135) in which society becomes a set of ‘environmental variables’ (136) that need to be dealt with to build the life one desires. Rather than relate what happens in the life course, for instance failure in terms of social mobility, to systemic contradictions, it is reconceptualised as a set of individual risks and opportunities (Beck & Beck-Gernsheim, 2002). The individualization of precarity, where this is felt as a personal failure rather than a sign of system failure, is a particular harmful outcome of this process (Gill, 2010; Sigl, 2016; Loveday, 2017).

Moreover, the reflexive biographies that early career scholars are building follow an increasingly narrow career script (Müller, 2012) as they report a narrowing of valuation regimes, towards a single form of academic worth, focused on high-impact publication output (Fochler, Felt & Müller, 2016; Müller, 2014). This was true also for our early career researchers when they talked about continuing a research intensive career. The insecurity of fixed-term positions pushes the early career researchers in the group towards an entrepreneurial and reflexive strategy. They are reflexive about their careers, what is lacking, what needs to happen and how they can influence their position. As they are in a constant competition, for jobs or grants, they feel a constant need to

appear attractive as candidates for a new (tenure track) position or a project grant. Denise reflects on how she does this:

**Denise:** I think it is really important as an assistant professor to find your niche, about that there might be comparison going on between each other.

**Interviewer:** And then others gauge whether you are in their way, in a manner of speaking?

**Denise:** Yes exactly, because everyone wants to find his or her niche. If we all go towards [subarea], that is [group leader] his main topic, you cannot raise your profile with that theme. My profile is really being in between [two sub areas]. I think everyone is looking for his or her own niche (...) You are also really thinking about your CV. And it is really important. And besides that I want to function well [in the department]. I like organizing things, and I think it is important to get good student evaluations, because I want to be a good teacher and a good academic. It is also really about output, indeed about publications. (...)

**Interviewer:** I aim to understand what it is like to be in a 3-year contract, when you have to publish a lot, but it doesn't seem to affect you, do you think it influences your research?

**Denise:** Maybe it does. Maybe you want to publish even more, you want to do as many different things as you can I think. I really enjoy working with others, so I like saying to people "Maybe we can write a paper about this and this." Whether we will really get to write it, that is the next question of course, but you try to keep balls in the air in the sense of "we could do this and this". At the moment for the yearly [global disciplinary organisation]-deadline, a big conference deadline, I try to finish stuff, now there are five papers and they can be submitted.

Denise clearly shows reflexivity about her CV and what needs to be on it to make it. She reflects on what it takes to be an enterprise or a brand that needs to be visible and needs to show potential. It is this continuous showing of potential and worth that is important in a science system in which research time is increasingly distributed on a competitive basis rather than part of the job. This also makes for a strong individual focus. Research time is understood as something that an individual can receive, rather than acquired through collective effort. Indeed, while some grants are collective in nature, the individual grants offer greater prestige and larger funds which puts one in a position to secure a tenure track position. The seeming certainty of employment a grant implies is the main reason for its desirability. The importance of publication is derived from the grant competitions in which publication counts are said to be crucial in judging ones CV.

### *Anxiety and career uncertainty (7)*

The short-term contracts and constant competition on the basis of individual merits create immense pressure on early career researchers (Müller, 2014; Sigl, 2016; Fochler & Sigl, 2018). Early career researchers tend to do as much as possible without a clear idea of what is enough. This is well documented in the literature and also came up often in our interviews in a pressure early career researchers put on themselves. As one example among many Ron illustrates this reflecting on why the work is never finished:

**Ron:** I work hard yes, that is a bit of a problem sometimes.

**Interviewer:** Do you have on the weekend, a morning, afternoon or day off?

**Ron:** Yes I do. I notice that I do have to take a bit of rest this week. That is the disadvantage of the postdoc-life: that there is an endless stream of work. And much of it is just for yourself. I have 20 students, that is manageable, and other than that I don't HAVE TO do anything. Everything I do, I do for myself. That makes it very alluring to just continue. But I don't work 7 days a week, and I sleep in, but I have to be careful I don't exaggerate it.

**Interviewer:** that you don't work too hard and too much... is that a problem with postdocs?

**Ron:** For me it is. Look if you put me in one of those work surveys, then I will score high on stress and... but I have a temporary contract, if I want to continue in the academic world then this is the moment to step on it for a bit. Not endless. Last summer I was on a holiday for three weeks, and this summer I will go for a month so it isn't like. I do take a holiday. For sure. But like this during the week (...) it is often that nearly every day, also in the weekend, you have something to do, that isn't always nice.

### **Countering individuation by promoting communitarian ideals in hiring committees**

In this research group, senior staff members aim to counter the individuating effect of the rise of project funding by promoting communitarian ideals and merit-based (rather than publication count-based) hiring procedures. The group leader explains that publication counts are not all that matters when a position opens up:

**Group leader:** I will dare to say out loud that our selection committees are not blind and stupid. It is not the case that if there are 4 internal candidates and you see that one has 7 publications and the other has 1, 'oh weird that person has 7 publications within [name] VICI-project, or [name] ERC-project', that nobody thinks 'oh well, it is convenient to have data on 25 countries being embedded within such a large team'. So that person with 1 publication can be compared to the person with 7. People are not blind to those things. What is more, often you have a different assistant professor-selection criterion: you do not want to have 7 APs who all do the same thing. So maybe that person who has 1 publication, who represents a different sub-area, maybe has a competitive advantage in a different area, can teach broader for instance, which is 60% of an AP-position. So it might look like it, but for 8 years I have been in almost all selection committees and they can see through that. If someone comes from a big project, and is co-author on 5 things within the project, then you can still compare that to someone who almost did a solo project.

What matters according to senior members of the research group is the extent to which group members contribute group work and act collegially. In almost all interviews the issue of collegiality came up. Interviewees argued that collegiality was very important for them, and that they appreciated this in others as well. This senior staff member feared collegiality was not valued in job application procedures, and he contrasts collegiality with publications, but his experience in the institute proved otherwise:

**Christoph:** I feel there has been discussion the last years about that it cannot be only publications, and of course there always already was some criticism from outside that we would be soulless publication monsters. My feeling is, and I have been through many job application procedures here, my feeling is that it has become increasingly important what

you do for the group, the softer things, that that plays a role. I was always afraid that that would not be the case, but my feeling is that it does matter, that is my experience.

**Interviewer:** Is that being made explicit, that that is important?

**Christoph:** Well, the other way around. It is never stated that it is only about publications. There is no official guideline that says 'If you have this and this and this and this, then you will be successful' or something like that.

A second senior-member explains that a research group needs a diverse group in terms of topics but also in what people are willing to do, for the group to function:

**Sarah:** I think definitely. I think output of course is number 1. I think there is an awareness that you can't just run a department on loners who can publish 50 articles per year, that's impossible, it will implode. You need a couple of people who keep it together.

The staff members in temporary positions also understand that helping out in the group is part of their job and doing so has helped them or will help them in job application procedures. David explains:

**David:** If I look at my own trajectory, then I see that, after my PhD, I solved a lot of tasks that had to be solved, but that a lot of people could not or did not want to do. There was a course for which within 1 month a new lecturer had to be found. I am someone who says 'yes' quickly with these kinds of things. (...) How flexible you are in terms of teaching, helping your colleagues, being present (...) In the end that is something that plays an important role. You have to look at the group as a whole, and that is what I mean with the idea that I have an important role, in a way, within the group. Because I teach certain courses, have a certain expertise, and maybe I do other things very badly, that could be, but this type of position within the group you cannot account for that by measuring output or measuring student evaluations.

The senior members quoted above, including the group leader, all declare that collegiality is important next to publication output. The two senior members both call into imagination an image of a 'publication monster' and a 'loner who can publish 50 articles per year', the type of academic they might feel fits with today's academic reward structures. This becomes clear because collegiality is seen as something that does not show up in quantitative measures, it is never visible but crucial to 'run a department'. Without staff members that do 'group work', organize seminars, are very active in teaching and coordination, the group could not function. But this also adds to the already lengthy list of what makes a good scholar. A TAP from a different group concluded:

We spend a lot of time wondering what the criteria are but I'm not sure there are any criteria at all. Like they see a person and think, oh I like this person, I like his work, so let's hire him. We can say this hire was based on X, Y, Z. but then next time it is D, E, F. There is no transparency who we want to hire, and based on what criteria we want to do that. (fieldnotes, 12-3-2015)

The communitarian ideals make hiring procedures less transparent as they add a new valuation regime that can be used, but does not have to be used, in selecting candidates (see also Lamont,

2009). As Stöckelová (2014) shows, a plurality of ideals is not necessarily better for early career researchers. In this case, in hiring and promotion decisions made based on successful grant applications communitarian ideals do not necessarily apply. Communitarian ideals seem to be important for scholars who do not obtain a grant which increases the inequality of expectations between those with project grants and those without.

### **Conclusion: The limits of valuation heterarchy without structural change**

In this chapter we analyzed the effects of the rise of project funding on the social structure of academia. We show that more temporary positions are created and the temporary phase in the career is extended. Short-term contracts make that early career researchers are more often on the job and grant market which in turn increases experiences of competition, establishes competition as a mode of governance, reaffirms the individual as epistemic subject and increases anxiety and career uncertainty. All of which impacts the social fabric of research groups and departments.

In high performing research groups such as the one we studied the effects of project funding are visible to a larger extent. In such groups the amount of project funding is very large leading to a bigger group of early career researchers in temporary positions. To establish a community, the group leader and senior staff members promote communitarian ideals in hiring committees, making clear that it is not just publications that determine whether someone receives a job offer. While a heterarchy of valuation regimes (e.g. Stark, 2011; Rushforth, Franssen & De Rijcke, 2018) might be a way to counter the negative effects of project funding our analysis shows important limitations. Following the analysis of Stöckelová (2014) we find that valuation regimes are not inherently bad or good. Promoting communitarian values also adds to the lists of expectations early career researchers have to deal with. Moreover, these hiring committees can be circumvented by researchers that obtain individual grants who can negotiate a position. It also decreases the transparency of criteria, which, while narrow, are at least clear when focused solely on publication counts. This analysis teaches us that in a heterarchy of valuation regimes a crucial question becomes what values count when and for whom.

Moreover, in high performing research groups such as this one the effects of project funding are not incidental but structural. Success in obtaining competitive project grants will always lead to more temporary positions, both PhD positions and post-PhD positions. The short-term of these contracts will always push these early career scholars to the job and grant market. As the amount of temporary staff members greatly surpasses the needs of any research group, based on their first flow financing, for new permanent staff these temporary staff members will have to seek employment elsewhere.

It is an important question to what extent the concentration of funding (and therefore of early career researchers) in a small number of research groups negatively effects the discipline as a whole on an epistemic level. The skills of any scholar are by definition limited. It might therefore, in terms of epistemic diversity, be useful to spread research funding across a larger number of groups.

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