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Abstract

The German academic labour market is largely a state-organised, public service labour market, which is differentiated according to type of university. In 2020, approximately 18% of academics are tenured professors, and less than 10% of non-professorial academics hold a permanent position. Referring to New Public Management and Excellence Initiative imperatives, our research thesis states that the metric turn towards standardized performance indicators as core judgement devices for hiring pseudo-objectivize homophily hiring habits, and, therefore, opportunity hoarding by tenured professors. Our argument starts by taking a historic look at the German professoriate as cultural and socio-economic elite. Building on this, we focus on the third-party funding and publication 'hamster wheels' to show that career metrics and homophily hiring go hand-in-hand. Our argument cumulates in the presentation of an analytic explanation that proposes how homophily hiring practices are organized by tracing the social mechanism of opportunity hoarding on the systems-level.

Keywords

Academic career; Germany; labour market; opportunity hoarding; performance metrics; professor

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Professors' Opportunity Hoarding and 'Hamster Wheels' in the German Academic Labour Market

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Characteristics of the German Academic Labour Market

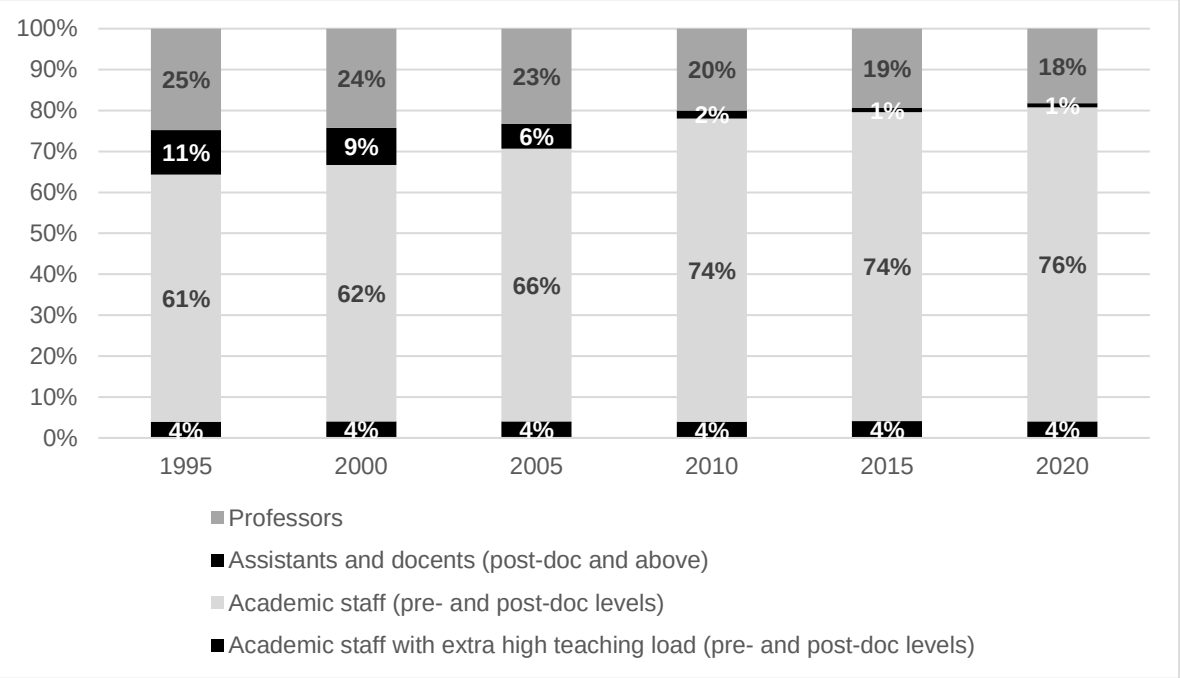
The German academic labour market is dominated by public universities, Universities of Applied Sciences (UAS), and public research institutes such as Fraunhofer and Max-Planck.[1] The laws of the sixteen federal states define academics' functions as research, teaching and research- and teaching-based knowledge and technology transfer. However, the legal framework varies slightly across Germany. State laws define precisely the teaching duties of academics, stressing why professors, traditionally, were referred to as higher education teachers (*Hochschullehrer*in*). For example, the laws of Lower Saxony (2007: §4) and Bavaria (2007: §2(1)) state explicitly that tenured professors should teach eight or nine hours and at a University of Applied Sciences 16 or 18 hours a week in term time (in German: *Semesterwochenstunden*), with defined hours also specified for non-professorial academic staff. While the percentage of time per week which professors devote to research (including research management) has remained largely stable for the period 1992-2018, the amount of time for administration of research has increased to more than 20% of their total working hours (Schneijderberg and Götze, 2020: 19), of course, at the expense of teaching. A by-law of North Rhine-Westphalia (2009: §5(2)), for example, states that a *Hochschullehrer*in* can apply for a temporary reduction of their teaching load when they have to focus more on other functions such as academic self-governance and research.

The academic labour market is characterised by a skewed distribution between tenured professors and the academic rest, and between tenured and non-tenured positions. In 2020, around 18% of German academics held the rank of a tenured professor. In three decades, the growth of positions below the professorship (academic rest) has drastically reduced the share of professorships from 25% to 18% (Figure 1). Professors are predominantly tenured, but this category also includes tenure-track professors such as junior professors and non-permanent visiting professors, which together account for only about 1% of the total academic staff (GFSO, 2022).

An academic career normally commences with an academic staff position at the beginning of the doctoral phase. With the doctorate the formal employment status as non-tenured academic staff typically does not change. Positions as assistant or docent are not common anymore (see Figure 1) and only a small and shrinking proportion of the academic rest are

[1] Due to the complexity of the labour market, research institutes, other higher education institutions and private universities, which employ about 8% of professors and less than 5% of academic staff (GFSO 2022), are not discussed.

Figure 1: Academic staff according to rank in German Higher Education Institutions (HEIs), 1995-2020



Sources: GFSO (2004, 2011, 2022); numbers might not sum up to 100% due to rounding.

employed in a tenured position. Comparing three surveys, Schneijderberg and Götze (2020: 13) report that permanent positions of the academic rest increased from 29% in 1992 to 31% in 2007, and then the proportion halved to 15% in 2018. In the 2018 survey, 80% of those with fixed-term employment reported that they had no prospect of a permanent contract. Official statistics underline these survey results. Of the 80% of all academic staff employed at the pre-doctoral or post-doctoral level, only 16% have permanent contracts (Table 1). The remainder of academics' struggle with the insecurity of a non-permanent position, where the average contract duration in 2020 is only 17.6 months at universities (pre-doc and post-doc) and even less (16.8 months pre-doc; 16.3 months post-doc) at Universities of Applied Sciences (Sommer, 2022). Thus, the German career path is characterised by a hard "status barrier" (Kreckel, 2013: 62) and is "monodirectional" (Rogge, 2015: 703), focused on advancement to a tenured professor.

There is clearly a bottleneck on the road to the tenured professoriate, and the distribution of staff is shaped like a wine decanter with a very wide bottom in which the roughly 80% academic rest floats (Schneijderberg and Götze, 2020: 45). According to the social structure of the German academic "survivor model" (Enders and Musselin, 2008: 134), the decanter narrows slightly from doctoral candidacy to post-doctoral ranks. Depending on the method of calculation, the post-doctoral survivors of this structure have about a ten or eight to one chance of becoming a tenured professor (Schneijderberg and Götze, 2020: 45). On average, every 23rd application for a tenured professorship is successful (BuWin, 2017: 194). The federal report on junior academics (BuWin, 2017) observes that about 60% of the advertised tenured

Table 1: Proportions of fixed-term and permanent employment of the academic rest in 2020.

		Full-Time employment			**Part-time employment**			**Total rows**
		Total	thereof permanent	thereof fixed-time	Total	thereof permanent	thereof fixed-time	
Assistants and docents (post-doc and above)	%	73	28	44	26	9	17	100
	n	2,564	998	1,566	902	304	598	3,524
Academic staff (pre- and post-doc levels)	%	53	12	41	47	4	43	100
	n	102,313	23,136	79,177	89,408	7,955	81,453	191,721
Academic staff with extra high teaching load (pre- and post-doc levels)	%	55	45	10	44	23	21	100
	n	4,860	3,974	886	3,902	2,019	1,883	8,911
Total colums	**n**	**109,737**	**28,108**	**81,629**	**94,212**	**10,278**	**83,934**	**204,156**

Source: GFSO (2022); percentage numbers might not sum up to 100% due to rounding.

professorships are awarded to the non-tenured academic rest, including assistant and junior professors, and about 40% seem reserved for the rotation scheme of tenured professors.

As a consequence, the decanter's neck is even narrower for the academic rest and widens toward the spout for tenured professors referred to as "opportunity hoarding" (Tilly, 1999: 87). This is applied as a social mechanism "[w]hen members of a categorically bound network acquire access to a resource that is valuable, renewable, subject to monopoly, supportive of network activities, and enhanced by the networks' modus operandi, [and] network members regularly hoard their access to the resource, creating beliefs and practices to sustain their control" (Tilly,1999: 91). This is a long-standing issue as Weber (1946/1919: 129) criticised such opportunity hoarding by tenured professors, their exploitation of non-tenured academics, and the "hazard" of the academic career at the beginning of the 20th century.

In addition to opportunity hoarding, academic career progression is vertically stratified according to cultural and socio-economic variables. From 1945 to 2013, about two-thirds of professors came from the upper class (Graf, 2015), and an academic career was frequently

inherited by their children. The social selectivity of the scientific career path is seen in a study of 1,340 professors in North Rhine-Westphalia, where 86% of tenured professors came from the upper and upper-middle classes and only 11% from the middle and lower classes (Möller, 2013) and for junior professorships, the figure is only 7%. Schneijderberg and Götze (2020) report that the currently observable closure of the career system is driven by the homophilic recruitment of new professorial staff. Homophily stands for a bond between individuals who share substantial common categories, such as class, education, gender, position, status and wealth (McPherson et al., 2001). To return to the image of the decanter, out of the wide pool, homophily seems to build a direct career ladder for those with a background in the upper social strata of society via junior professorships towards the narrowing decanter neck of tenured professorships.

At the beginning of the 21st century, the introduction of New Public Management (NPM) performance metrics and evaluation instruments (Huber and Hillebrand, 2019), which are supported and intensified by the German Excellence Initiative, also had an effect on the inequality in hiring practices (Hartmann, 2010; Mergele and Winkelmeyer, 2021; Münch 2014, 2019). Accordingly, our research thesis states that the metric turn towards standardised performance indicators used as core judgement devices for hiring, pseudo-objectivizes homophily hiring habits, and, therefore, opportunity hoarding by tenured professors.

The German Excellence initiative

In Germany, the Humboldt illusion of the unity of research and teaching, and, therefore, the teaching-research nexus, is crumbling (Müller and Schneijderberg, 2020). First, the Excellence Initiative promotes the "research imperative of high-status academics and HEIs," which "is steadily moving the entire German [university] system in the direction of prioritizing research over teaching" (Götze and Schneijderberg, 2022: 71). However, instead of having more time for research, this decrease in the proportion of teaching time is balanced by a higher workload for administration of research. Second, the ability to obtain third-party funding from sources external to the university is connected to a vertical stratification of the level of individual academics and universities. There is a differentiation between research-oriented universities with lower workloads in teaching and focus on graduate education at the top of the status hierarchy, and more teaching-focused universities at the bottom. At the individual level of professor, "a division is established via funding between the winners and the losers of the status competition" (Götze and Schneijderberg, 2022: 70).

This division is primarily promoted by the Excellence Initiative, which is financed by the state but organised by the German Research Foundation DFG (*Deutsche Forschungsgemeinschaft*) and the German Science Council (*Wissenschaftsrat*), both run by the academic elite as an institutional oligarchy (Pusser, 2008). Institutional oligarchy refers to "the imperialistic thrust of modes of authority […] in the way that personal and collegial forms, rooted in the disciplinary bottom of a system, work their way upward to have an important effect on enterprise and then finally system levels" (Clark, 1983: 122).

The Excellence Initiative and funding-induced status competition has a major impact on career opportunities of the academic rest. The Excellence Initiative and other recent reforms seem to maintain the wine decanter or to expand its base even more. For example, the international expert committee evaluating the 2006 Excellence Initiative outcomes concluded that it

"has not alleviated the bottleneck problem…. Due to the creation of a considerable number of additional temporary postdoc positions, the bottleneck has at best been postponed in the wrong direction, because the decision for or against an academic career should be made earlier rather than later" (IECEI, 2016: 28, translated by the authors). We interpret the parallel decrease of available professorships and permanent employment below the rank of a tenured professor, and increase in numbers of the academic rest, as an act of opportunity hoarding – or in the words of Currid-Halkett (2017: 195): "Status is a movable feast, and once the middle class catches on,…the dominant elites find new ways to illustrate their status."

Third-Party Funding and Publication 'Hamster Wheels'

Research is a function delegated to academics by the state and this is used by academics for reputation gain. It fulfills the basic function of a "selection mechanism in a finite system with finite resources confronted to a potentially infinite offer. These resources can be money, personnel, instruments or time" (Gingras, 2021: 304). Of course, the explicit creation of competition (for example, through the Excellence Initiative) and (peer) evaluation of research grant applications and award of funding seems to convince German governments that the money is well spent. In addition, application procedures serve an administrative, that is bureaucratic public service convention of creating files as Weber (2002/1921) noted at the beginning of the 20th century.

However, the introduction of NPM instruments, such as evaluations and agreements on objectives in the *Framework Act for Higher Education* (HRG 1998), World University Rankings (Wilbers and Brankovic, 2021) and other rating and peer evaluation efforts (Musselin, 2018) have also affected academic reproduction by pseudo-objectivizing homophily. Accordingly, metrical valorization of performance (MeVoP) of third-party funding, publications, and citations, seems to be used to identify well-performing professors or champion the most valuable professors/players (MVP). MeVoP is "purely a numerical expression of reputation and status, which are the key currencies of the academic profession" (Götze and Schneijderberg, 2022: 73). The cumulative advantages expressed by MeVoP reproduce the Matthew Effect, which captures why "eminent scientists get disproportionately great credit for their contributions to science and relatively unknown scientists tend to get disproportionately little credit for comparable contributions" (Merton, 1968: 57). Bourdieu (1975, 1986) has criticized the ruthless prestige and reproduction practices by academic elites, which, nowadays, apply incoherent metric indicators. For example, citations are output appropriation by academics, the Journal Impact Factor is an output appropriation by publishers, third-party funding is an input appropriation by academics and universities, and a Nobel Prize is awarded to a few MVP-individuals, and only awarded in some disciplines and not in others.

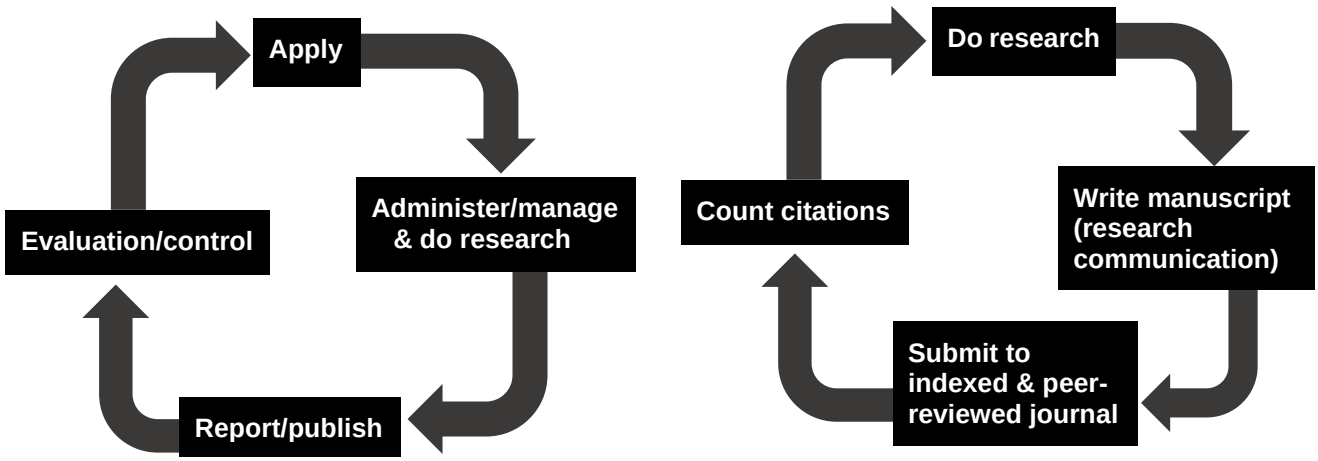
German policy makers, academics and universities seem obsessed with the NPM-organising of research via third-party funding (Gerhards, 2014; Winterhager, 2015), as what seems good for the reputation and status of the senior ranks, also seems logical to establish for the socialization and career progression in the German academic labour market. The academic rest aspiring to become tenured professors must gain merit in particular in the third-party funding and publication system, characterised as 'hamster wheels'. The NPM 'hamster wheel' of third-party funding works as a similar treadmill to cycle publications (Figure 1). We argue

that both 'hamster wheels' are adaptions of opportunity hoarding which are "procedures that ease day-to-day interaction, and the elaboration of valued social relations around existing divisions" (Tilly, 1999: 97). The 'hamster wheel' adaptions are metrified emulations, that is "the reproduction of organizational models already operating" (Tilly, 1999: 95) for opportunity hoarding in society as well as the academic profession. Socio-historically, habitual opportunity hoarding by professors to securing homophily among its ranks places professors as part of the socio-economic (upper) middle-class. Professors are considered "a social and cultural elite which owes its status primarily to educational qualifications, rather than to hereditary rights or wealth" (Ringer, 1990/1969: 5) with roots in a "self-image of the culturally aristocratic exponents of a humanistic tradition formed in the German Gymnasia and philosophical faculties" (Habermas, 1971: 422). The socio-cognitive challenge materialises in the effort of professors to defend a position of power and prestige within universities, for example with reference to publication and third-party funding performance metrics. Accordingly, MeVoP and the MVP-position claims of professors as organic professional intellectuals "function in directing the ideas and aspirations of the class to which they organically belong" (Gramsci, 1992/1971: 3).[2]

Figure 1: 'Hamster wheels' and metrical valorization of performance

The NPM 'hamster wheel' as rat race for third party funding

The publication 'hamster wheel' as rat race for reputation and status



A pre-doctoral researcher employed in third-party funded projects is socialised into the 'hamster wheel' of having to apply for research money, to administer/manage and undertake research, to report/publish, and to be subject to evaluation/control. During the post-doctoral phase, academic staff seemingly cannot advance an academic career without joint or individual acquisition of third-party funding, which Roumbanis (2019) defines as "[s]ymbolic violence in academic life." Obviously, the NPM 'hamster wheel' also symbolises the rat race

[2] In comparison to organic professional intellectuals, traditional professional intellectuals, "literary, scientific and so on," hold a socio-cognitive "position in the interstices of society," which "has a certain inter-class aura about it" (Gramsci, 1992: 3).

on the scientific status market for reputation, adapted in metrics-based evaluations, and as an emulation of the bureaucracy/management credibility cycle (Schneider et al. 2021: 333) and the quality cycle (Hendel and Lewis, 2005; Koch and Fisher, 1998).

The trend of having to become a junior-MVP can be observed by comparing CAP-2007 and APIKS-2018 survey data of non-tenured academics (Table 2). The regressions based on APIKS-2018 (and partly also in the case of CAP-2007) show that the output of journal articles and the share of peer-reviewed publications increase the longer non-tenured academics are in their position. The group of academics who have been in their position for 6-12 years (mostly new post-docs) produce more journal publications than the group who have been in their position for 0-6 years (mostly pre-docs), and have a higher share of peer-reviewed publications in both surveys. Moreover, in APIKS 2018, the group of non-tenure track academics who have been in position for 13 years (established post-docs) publish even more than the group of academics who have been in position for 6-12 years (new post-docs), an effect that was not found in the case of CAP 2007.

Table 2: Publication output by newer and more established non-tenured academics (articles and peer-reviewed publications)

		Articles		*Peer Review*	
		CAP	**APIKS**	**CAP**	**APIKS**
Years in position	(0-6 years)	-0.49**	-0.65***	-0.15	-0.31***
	(Ref: 7-12 years)				
	(13 or more years)	-0.21	0.14*	-0.15	-0.02
	Gender female (Ref: male)	-0.09	-0.20***	-0.57	-0.09
Employment	Part-time (Ref: Full-time)	-0.74***	-0.32***	-0.91**	-0.44***
	Fixed term (Ref: Permanent)	-0.21	-0.18**	-0.12	0.13
Constant		2.24***	2.19***	1.14**	1.09***
N		249	3008	230	2837

Negative binomial regression (Articles/book chapters), fractional logit models (Peer Review); * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

These results show two main developments: First, the process of socialisation and self-selection towards a (metrified) publish or perish culture means that, in the main, academics remain and succeed when they incorporate these metrified norms. However, the issue is complicated as Balsmeier and Pellens (2014) observe that those with a background in the lower social strata leave science because they are less likely to follow these norms and therefore are lost to the system through the process of self-selection. Second, the differences between APIKS-2018 and CAP-2007 show that a (metrically oriented) publish or perish culture is taking over among post-doctoral researchers, which we attribute to the hiring universities' requirements for becoming a tenured professor.

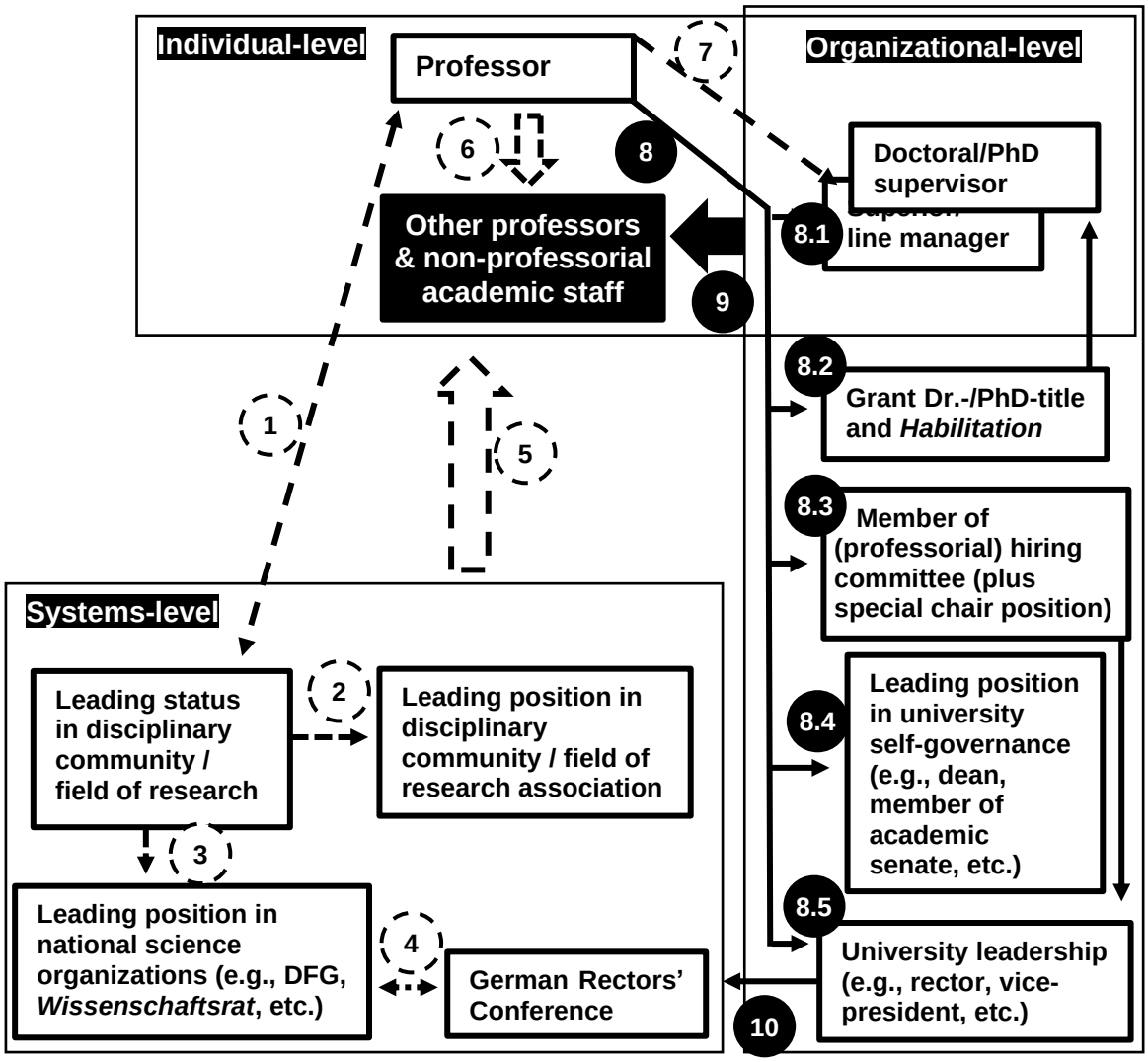
The Role of Professors in the Organisation of the German Academic Labour Market

Of course, the data in Table 1 has heterogeneity issues. On the one hand, it is not possible to differentiate between social backgrounds of non-tenured academics. On the other hand, the publication and third party 'hamster wheels' are part of a sorting machine that rotates post-docs from lower social strata out of the system, either through non-compliance or habitually not knowing the rules of the game as well as post-docs from the highest social strata. Nevertheless, a general metrical performance valorization compliance trend is observable among those potentially aspiring for a tenured professorship (Schneijderberg et al., 2022). Thus, the overall compliance among post-docs raises the question of how homophily hiring practices prevail. We think that an answer can be provided by tracing the opportunity hoarding mechanism of tenured professors on the systems, organizational, and individual-level. Such relational explanations propose that inequality as "asymmetrical social interactions in which advantages accumulate on one side or the other, fortified by construction of social categories that justify and sustain unequal advantage" (Tilly, 2001: 362).

The formal and informal expectations as well as the associated cognitive and social mechanisms within the academic profession are closely interwoven (Kogan and Teichler, 2007; Ohly and Schneijderberg, 2021). In Figure 2, the solid line represents the formal powers of tenured professors which are any expectation/influence in legal documents (state law, teaching regulation, university statutes), while the dotted line represents informal powers capturing all implicit/tacit expectation/influence of professors (Bourdieu 1975, 1986). Analytically, the operation of the social mechanism of opportunity hoarding by a tenured professor can be figured as a set of events, which can comprise all or a majority of the ten events in ongoing processes. These social "mechanisms are events that alter relations among some set of elements. Processes are frequent (but not universal) combinations and sequences of causal mechanisms" (Tilly, 2001: 365). The complex relationship of interrelated formal and informal leadership of tenured professors is indicated by the dashed arrow 1 in Figure 2.

The environmental interrelations, that is the social contract inviting professors to participate in system-level governance, is based on a state-delegated framework and academic tradition (Ringer, 1986, 1990). Academics benefit from relatively strong protection from interference by the state in their research and teaching in the German constitution (*Grundgesetz* article 5(3)1) and are granted a relatively strong position in university and sciences governance. In the social partnership (*Sozialpartnerschaft*) between the state and the academic profession (Stichweh 1994; Götze and Schneijderberg 2022; Schimank 2005), the strong academic institutional

Figure 2: Schematic overview of tenured professors' multi-level, formal (solid arrows) and informal (dashed arrows) opportunity hoarding in German universities



oligarchy in leadership positions including academic senates and national academic bodies (such as German Rectors' Conference and German Science Council [*Wissenschaftsrat*]), influence policy and law-making such as the Excellence Initiative. At the system-level, being a professor/obtaining leading status in the community is a precondition for being elected to a leading position in the academic community (dashed arrow 2; transformation of informal to formal influences) and/or for another collegial body governing the university and science system (dashed arrow 3). As a member of the latter, a professor might also have priority access to the German Rectors Conference (dashed arrow 4). Arrow 5 indicates the potential sum of system-level informal events that a professor brings into the individual-level relationship, that is the structural macro-micro-link for the construction of reputation and metrical valorization regimes.

On the individual level, a professor can influence other professors and non-professorial academic staff both in the informal, reputation-based way (dashed arrow 6) and in possibly multiple formal ways (solid arrow 8). Formalised social events possibly affecting the cognitive

and social behavior of other professors and non-professorial staff can work as a potential sum (solid arrow 9). This structural meso-micro-link might potentially be equally effective to trigger events affecting the macro-micro-link (dashed arrow 5). The multiple formal ways for influencing social behavior originate in the formal position of a German professor who is in the position of superior/line manager; and/or recommending the award of the Dr.-title and *Habilitation*; and/or representing the professoriate in hiring committees (solid arrow 8.3); and in academic self-governance; and/or by becoming part of university senior leadership (solid arrows 8.1-8.5). As president/rector of a university, a professor is the formal representative of the university in the German Rectors Conference (solid arrow 10). Inside the university, law guarantees the priority rights of tenured professors: Tenured professors must hold the majority of seats in any organisational entity (including professorial hiring committees and senate) deciding on academic issues concerning research (Bundesverfassungsgericht 1973).

For a tenured professor, the most effective structural levers for gaining influence are to combine as many possible events of opportunity hoarding. For example, for a doctoral candidate employed at a professorship, a professor can be their superior (solid arrow 8.1), chair or part of the doctoral committee (solid arrow 8.2) and supervisor of the dissertation research (dashed arrow 7). In a similar way, multiple event options for establishing the social mechanism of opportunity hoarding interact for a professor who is in the special position as chair of a (professorial) hiring committee (solid arrow 8.3).

Conclusions

Figure 2 presents a complex social system composed of formal and informal options for tenured professors' homophile hiring practices and social reproduction of a cultural and economic elite. Tenured professors' opportunity hoarding is an explanatory social mechanism of a social process, which was modified by the metric turn towards standardized performance indicators as pseudo-objective judgement devices to replace blunt homophily hiring habits. As part of the nature of the social mechanism of opportunity hoarding, the third-party funding and publication 'hamster wheels' seem to produce homophily centrifugal, inward or toward tenured professorship's spinning force and centripetal, outward or out of the academic profession spin for those with the wrong class background. For doctoral and post-doctoral candidates from the upper (middle) classes, a career ladder toward tenured professorships (only 18% of academic positions, in 2020) seems to be dangling from the spout of the wine decanter. In the survival game in the decanters' wide pool the third-party funding and publication 'hamster wheels' seem to be formally and informally turned by tenured professors of which about 75%-86% have a social background in the upper (middle) classes (Graf, 2015; Möller, 2013).

Accordingly, the metric turn towards standardized performance indicators as core judgement devices for hiring pseudo-objectivize homophily hiring habits, which seem the consolidation of privileges in the German academic labor market based on meritocracy – Young's (1956) sarcastic glue-term of merit and aristocracy for status justification. In Tilly's (1999) terms, merit (for example to become a tenured professor) and social background (for example, cultural and economic aristocracy) construct and reconstruct a complex social system analytically captured in Figure 2 for opportunity hoarding, which builds on professors' status and prestige (relative goods). "Although people come to value them for their own sakes," Tilly (1999: 26) is very clear that "relative goods generally occupy a subordinate, derivative

position: they serve as a means of creating or maintaining categorical inequality with respect to autonomous goods." Even more, Tilly (1999: 26) emphasises that "prestige, power, clientele, and possession of status-making goods" are "instruments and products of categorically based exploitation," which, in turn, manifests in the form of autonomous goods gains, no matter whether these are individual income and wealth or metrified publication outputs and third-party funding. However, irrespective of third-party funding and publication 'hamster wheels' producing performance evaluation metrics, their relevance for becoming a tenured professor seem negligible considering the observation by Graf (2013), Möller (2015), and Schneijderberg and Götze (2020) which suggest that the career path of the academic rest is largely determined by cultural and socio-economic background homophily. In the academic labour market in Germany, such homophily seems to be an emulation of the organised great divide in the academic ranks between professors and the academic rest.

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