Chapter 12
Transformation and Heteronomization of the Academic Field

From Scientific Competition to Economic Struggle

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Introduction

If we apply a field-theoretical perspective to the academic field, it can be understood as "the locus of a competitive struggle, in which the specific issue at stake is the monopoly of scientific authority, defined inseparably as technical capacity and social power" (Bourdieu 1975: 19). Across different nation-states, and indeed in concerted international collaboration, numerous researchers have begun to analyze and criticize a specific recent transformation which is altering the academic field, the character of scientific competition, and the sources of power that are constitutive for modern science. Two of the most striking features of the changing scientific field and academic practice in our time are the substantially increased significance of international university rankings, with an academic 'Champions League', and the global expansion of New Public Management. Both of these new features of the academic work represent a particular colonization of the individual scientific competition for genuinely scientific and symbolic capital, i.e. for progress in knowledge and recognition by the scientific community. This colonization – or heteronomization – manifests itself in the form of the *institutional economic* competition between universities for *institutional* capital, i.e. for research funds, successful researchers, gifted students, and positions of power facilitating the realization of competitive advantages (Wildavsky 2010; Münch 2014, 2016; Münch and Baier 2012; Baier and Schmitz 2012; Baier and Münch 2013; Wieczorek et al. 2017; Baier and Schmitz in this volume).

Robert K. Merton's (1973 [1942]) basic norms of scientific practice – universalism, organized scepticism, intellectual communism, and disinterestedness –

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under the trusteeship of the scientific community and the individual professional associations at the autonomous pole of the scientific field are superimposed by the economic rules of striving for monopoly rents from competitive advantages and market power at the heteronomous pole. Thus, the transformation of the academic field can be described by a particular form of intrusion (Bourdieu 1998): the economic nomos invades the academic field not only at the level of the agent's habitus and practice, but also – and increasingly – at the level of the agents' institutions: the universities.

In this chapter, I will emphasize three core characteristics of the university in this struggle for achievement and their impact on scientific practice and the openness of knowledge evolution: the *entrepreneurial* university striving for competitive advantages, the *audit* university applying measures of quality management from the world of business, and the *strategically planning* third-party funded university, extensively focused on the acquisition of extensive third-party funding for large scale collaborative research (cf. Münch 2014, 2016; Münch and Baier 2012; Baier and Münch 2013; Wieczorek et al. 2017).

The Entrepreneurial University and the Rule of Numbers

According to Bourdieu (1975, 1988), scientific practice can be localized in a scientific or academic field. In an ideal-typical way, this field can be characterized by a horizontal axis with the two poles of autonomy and heteronomy, and by a vertical axis referring to the availability of more or less scientific or institutional capital. In this field, genuine scientific capital (such as publications) and symbolic capital (such as citations, honors, awards) founded on scientific capital are located at the autonomous pole, while institutional capital (research funds, institutional networks, positions of power) and the related symbolic capital (prestige) are situated at the heteronomous pole. I contend that the researchers' and research teams' individual competition for advances in scientific knowledge and recognition for their contributions from the scientific community take place rather at the autonomous pole, while the universities' battle for the accumulation of material and symbolic institutional capital is above all fought at the heteronomous pole.

Remarkably, in his early conceptualization of academic fields, Bourdieu took institutions into account: "The structure of the scientific field at any given moment is defined by the state of the power distribution between the protagonists in the struggle (agents or institutions), i.e. by the structure of the distribution of the specific capital, the results of previous struggles which are objectified in institutions and dispositions and command the strategies and objective chances of the different agents or institutions in the present struggles." (Bourdieu 1975: 27). It is a typical feature of the global expansion and increased importance of rankings and New Public Management (NPM) that universities are addressed as actors who have to position themselves in globalized fields of science and nation-states (Hazelkorn 2011). As a consequence, we can observe a process of encroachment, or superimposition, upon

individual scientific competition between scientists of the institutional competition between universities. Universities see themselves increasingly as enterprises striving for competitive advantages, i.e., monopoly rents enabling them to accumulate institutional capital. In the first instance, these institutional struggles for positions in rankings which are fought at the heteronomous pole of the field also change the rules of scientific practice at the autonomous pole. Applying Bourdieusian field theory to Merton's basic norms of science may lead to the contention that resources and scientific knowledge are shared as public goods at the autonomous scientific pole. In the Mertonian ideal world, and a large portion of the Western academic field of the twentieth century, this involves an awareness of the fact that the progress of knowledge is based on a great variety of altruistic cooperation that depends both on smaller and larger contributions. In contrast, the heteronomous pole has always had the role of providing a platform for the exclusive utilization of resources and knowledge which are solely shared within strategic alliances. This, indeed, is the very characteristic of entrepreneurial universities that contributes to this specific type of academic capitalism (Slaughter and Leslie 1997; Slaughter and Rhoades 2004; Radder 2010; Ginsberg 2011; Berman 2012; Münch 2014).

What appears illegitimate at the autonomous pole possesses a distinct status of legitimacy at the heteronomous one; here, the economic field intrudes into the academic field, giving rise to an understanding of universities as enterprises. Resistance against this transformation, fed by the scientific nomos, and represented by the autonomous pole in particular, has little chance of success. Today, the institutional competition between the entrepreneurially managed universities prevails in large parts of national scientific fields. This leads to increasing differentiation between internationally interconnected elite institutions, which at the same time benefit from more capable local and global business partners. Without strong international networking, the remaining universities see themselves reduced to the status of institutions that are only interconnected in their own regions, positions that they are unable to change. This regional aspect corresponds to the logics of economic competition, but not to the requirements of scientific competition. The latter aims for an open evolution of knowledge, which requires utmost diversity. This is driven more by small teams of researchers at a great variety of locations than by the large scale collaborative research that can only be maintained at huge sites without internal displacement effects (Münch 2014).

We can clearly see here what Mathias Binswanger (2010: 44ff.) describes as *market illusion*. The transformation of public services into competitive processes does not usually entail the development of markets in the ideal sense. In the private sector, markets are also distorted by cartels, monopolies, and oligopolies. Such distortion easily occurs in the provision of public services, since better equipped providers can obtain privileged access to central public demanders of services and thus manage to secure a dominating competitive position. This is also entirely applicable to the presence of dominant universities in the committees of public funding institutions like the German Research Foundation (DFG) and their influence on the funding programs, as well as on the distribution of research funds. In other words: The economic illusio that intrudes into the scientific field does not result in

a straightforward marketization of science, but rather in a violation of the market principle. The tendency towards overinvestment at the top and underinvestment among the wide mass of universities is thus a counterproductive consequence of the increasing concentration of research funding on elite institutions – not only in the scientific regard, but also from the economic point of view.

Research shows a curvilinear, inverted u-shaped relationship between investment and returns in the sense of publications. In minimally capital-intensive disciplines like microeconomics, the optimal point of the critical mass of equipment is reached much earlier than in very capital-intensive disciplines such as, for instance, particle physics (Jansen et al. 2007). The optimal point of investment is achieved earlier the stronger the related output is relativized in terms of investments. It is reached at the latest point of ongoing investment for the absolute output, is found in a median position with regard to the output per scientist, and is hit very early for the output per one million Euro research funds. Beyond this optimal point, the law of falling marginal utility becomes effective. Every further unit of investment yields less output. We can demonstrate for the discipline of chemistry in Germany that – under the condition of the curvilinear, inverted u-shaped causal relationship between investment and returns – the increasing concentration of research funding on elite institutions results in numerous institutions remaining below an optimal equipment threshold, while the elite institutions enjoy facilities that surpass the optimal level by far (München 2014: 223ff.). The overall scientific output, not to mention economic efficiency, would be much higher if more institutions were equipped exactly at the critical point of optimality. Large investments of institutional capital might enhance absolute publication output, but they do not improve relative publication output per scientist or the relative output per invested amount of money.

Despite the developments outlined so far, the forces which counteract the concentration processes of elite competition have not been eliminated completely. In Germany, federalism is such a force. The eagerness of 16 federal states to distinguish themselves with excellent universities results in a broader distribution of at least adequately equipped universities than, for instance, in France and Great Britain. These universities have been proven to perform well in the competition for scientists, students, and third-party funds. Among other things, this is evidenced by the research rating of the German Science Council (WR 2008) pertaining to the two subjects of chemistry and sociology. In chemistry, at least one internationally visible research unit assessed as very good or excellent was found at as many as 34 out of 57 universities, and at 14 out of 20 non-university research institutions. As far as sociology is concerned, 34 out of 54 universities and 3 non-university sites achieved such assessments.

A network analysis of first appointments to a professorship in the field of chemistry confirms that, (unlike in the United States, where alumni of the larger institutions are at a considerable advantage) even young scientists trained at smaller locations in Germany have certain chances of being appointed as professors at smaller, middle-sized and larger locations (Baier and Münch 2013). However, it is undeniable that large locations provide an extremely high number of first professorial appointments from their own ranks for the entire system. In Germany,

one must additionally consider the relatively high number of non-university research institutions, which spend about 40% of the public research budget. They also develop a large number of first-appointment professors.

Also, in contrast to the United States, where the top 20 departments in the field of sociology, for example, recruit 88% of their assistant professors from among themselves (Burris 2004), the training and placement of junior researchers is subject to broader distribution and variation in Germany. However, there is still a considerable concentration of institutional capital and of purely scientific capital in the field, which cannot be disregarded. If the memberships of academies, the DFG, and German Council of Science and Humanities were taken into account, they would concentrate at the top, thus multiplying the institutional capital gathered there.

Nevertheless, the German political field tends to abide by the global agenda by institutionalizing heteronomous principles of differentiation within the scientific field. I contend that generalized mistrust in the performance of public institutions is a basic characteristic of this global agenda. The paradigm of basic mistrust in the performance of public institutions, globally spread by the neoliberal reform agenda, is theoretically rooted in public choice theory and particularly in the principal-agent model of institutional economics (Meyerson 1982; Laffont and Martimort 2009). The principal delegates tasks which they are unable or unwilling to accomplish themselves to an agent. It is assumed that both principal and agent are rational utility maximizers. Accordingly, the agent has to be paid an appropriate remuneration for their services. The rarer the skills, the higher the enforceable wage demands. More common qualifications entail the need for collective support from trade unions. As both are utility maximizers, the principal must be careful not to be outsmarted by the agent, who might exploit the principal by achieving the required minimum output with the lowest effort, or by performing a task to their own satisfaction, but not to the satisfaction of the principal. The principal is thus primarily confronted with a control problem: All efforts must be concentrated on making the work of the agent observable and controllable. One extreme method would place the agent in a market where they have to sell their services on their own, thus being paid by revenues. The other drastic approach involves agreeing on a piece rate. There is basically no trust between the principal and the agent. Everything has to be regulated by a contract that specifies the services to be performed and the payable remunerations very closely. Should this be impossible, the contract is incomplete and contains more or less serious information asymmetries (Tirole 1999). Both parties are never fully aware of what the other side is doing; not upon conclusion of the contract, nor during the performance of the delegated tasks, nor when the rendered service – regarding which the agent is better informed than the principal – is assessed.

The application of the principal-agent model entails a permanent search for possibilities to eliminate information asymmetries between the two parties. The steadily increasing advancement of information technologies, of instruments for the collection and evaluation of data, has made a substantial contribution to this phenomenon. The digitalization of work has unquestionably promoted the efforts to observe work performances and services, and to fine-tune them down to the

tiniest details. Today, principals can monitor the work performances and services of their agents online in real time and guide their behavior with the help of incentive systems (Therefore, every principal who is advised by McKinsey & Co. dreams of digitalized fine-tuning). One tool which has created great expectations in this regard is the Balanced Scorecard (Kaplan and Norton 1993), which is designed to log even complex activities aimed at optimizing several goals at the same time into a digitalized incentive and control system. It requires a growing amount of data evaluated with increasingly efficient computers.

Without this progress in information technology, no one would have expected that the completion of even complex tasks could be subject to monitoring in even the most minute detail. Once available, every application of this instrument at one site entails an increasing pressure to apply it at other sites, too, in order to fine-tune complex, interrelated performances. This development also affects academic activities that must likewise be captured by information technological methods which use indicators. The issued performance records, completed written and oral examinations, PhD graduates, habilitations, publications, and acquired third-party funds are to be counted, credit points have to be assigned, and the attained credit points have to be linked to payments. In order to leave nothing to chance, target agreements have to be negotiated pertaining to the acquisition of external funding and to the number and volume of publications. Research and teaching are thus turned into a calculable and controllable process for the university administration. Presenting the relevant indicators, the university administration can explain itself to external parties, to government ministries, the university council, to sponsors, and to the public. And since this need for justification from third parties has only grown in significance in face of the general suspicion that public institutions are prone to waste tax money – a suspicion itself inspired by neoliberalist impulses and the economic principal-agent model – the new control and monitoring system based on scores is sprawling relentlessly and inexorably in the field of academia. The scores are intended to visualize what had never before been visible from the outside.

The visualization of the previously invisible is in the best interest of the media; it can much better fulfill its informative duties towards the general public, and indeed has a whole new field for reporting that now delivers interesting news, because the increases or losses in numbers evinced by the indicators are attractive even for the inattentive reader. We must be aware that the fulfillment of the increased informative duties towards the outside world – that is, media reporting on universities – affects research and teaching within universities, as they are in consequence driven to provide data and events in a form easily presentable to the public by the media. At first glance, this appears to be a sound representation of what is done in research and teaching anyway; it should not present any problems. For this purpose, the public relations department is expanded, followed by the publication of an impressive high-gloss magazine and increasing attempts to furnish the audience with data on the services performed in the field of teaching and research. However, success in reporting is determined by the laws of impression management. At this point, the external criteria of successful reporting begin to exert their influence on research and teaching within the university. This might be mitigated by constructing a media-

compatible facade behind which teaching and research can continue to follow their own rules without being disturbed (Meyer and Rowan 1977). However, public relations strategies can also colonize the field of teaching and research, at least to the extent to which they are subject to the production of medially well exploitable events and scores (cp. Bourdieu 1998). Especially these scores will then turn into a reality sui generis, a social fact subjecting teaching and research to its own regime. At this point, the rule *by* numbers turns into a rule *of* numbers from which no one can escape (Porter 1995).

The rule of the numbers is fueled by the fact that the university, acting as an enterprise towards the outside world, at the same time requires internal quality management capable of steering the field of teaching and research in a way that ensures for the university the best possible conditions in its confrontation with other universities. The illusion of measurability identified by Mathias Binswanger (2010: 67ff.) comes into effect here. Since the competition between universities lacks any price-performance mechanism, scores have to be applied in order to make the performances rendered at universities, or individual faculties and departments, comparable – and to enable decision-making based on these comparisons, such as, for instance, government funding, allocation of third-party funds, sponsorship money, or taking up studies. Making this kind of commensuration possible is the function of rankings (Espeland and Sauder 2007).

The Audit University and Standardization

In his description of the scientific field, Bourdieu put a particular emphasis on the special relationship in the sciences between the expert and the layman: "The struggle for scientific authority [. . .] owes its specificity to the fact that the producers tend to have no possible clients other than their competitors" (Bourdieu 1975: 23). In this view, "this means that in a highly autonomous scientific field a particular producer cannot expect recognition of the value of his products ('reputation', 'prestige', 'authority', 'competence', etc.) from anyone except other producers, who, being his competitors, too, are those least inclined to grant recognition without discussion and scrutiny" (Bourdieu 1975: 23). He contends: "This is true de facto: only scientists involved in the area have the means of symbolically appropriating his work and assessing its merits. And it is also true de jure: the scientist who appeals to an authority outside the field cannot fail to incur discredit" (Bourdieu 1975: 23).

Applying this view, I contend that the ongoing transformation of the scientific field also manifests itself in a particular transformation of the specific expert-layman relation Bourdieu identified for the scientific field: Just as there is a genuinely scientific form of competition, there is also the genuinely scientific process of quality assurance situated at the autonomous pole of the academic field. In an ideal-typical scientific field, intra-scientific quality assurance provides the basis upon which scientific communities build their professional trusteeship. Their vitality,

cultivated in annual conventions and in many individual conferences and workshops, has always been an important prerequisite for scientific progress.

Another crucial factor is the socialization process, compelling junior scientists to incorporate the search for truth for its own sake and the desire for recognition from the scientific community into their habitus. Every statement made in science calls on the addressee to subject this statement to a thorough critical investigation. Every thesis provokes an antithesis, every assertion elicits criticism. The ideal speech situation as a regulative idea ensures that no statement can claim to be true simply because of the speaker's authority; only the better argument counts. Enrolling in university study programs means becoming integrated in and getting used to this process of assertion and criticism, and the more advanced the student is, the better he or she masters the necessary methodical tools. Peer review as a genuinely scientific quality assurance tool is rooted in the process of criticism between peers. Scientific journals, publishers, and editors of anthologies subject each contribution to a more or less systematically organized peer review (Bornmann 2010).

When scientists in Germany are appointed to a professorship at the average age of 41 years, they have incorporated the critical examination of statements to a degree that every thought internally follows this procedure, and possible objections are anticipated far in advance. The larger part of scientists has made this process a habitus; they belong to the cautious species who critically investigate each thought from all perspectives before putting it up for discussion. They pursue their research activities under a strictly controlled risk. Those scientists who take greater risks differ from this approach: This starts with the spontaneous expression in a workshop and ends with the draft of a new theory. However, these adventurous researchers constitute a small minority of scientists. It could even be said that the hindrance of too much self-criticism presents the greatest obstacle to those academic careers that aim to go beyond mere quality improvement and actually create new knowledge. From the point of view of science itself at the autonomous pole, we might claim that it suffers rather from too much than from too little quality assurance.

Against this backdrop, there can hardly be said to be a lack of genuine scientific procedures for quality assurance that would explain the current movement professing to provide better quality assurance in science. The reason for this movement must thus have its origin outside science, or at least outside the autonomous pole of the academic field supervised by the scientific community. It is the neoliberal agenda, encouraged by the media that puts public institutions under general suspicion of wasting taxpayer's money. The traditional control ensured by the Court of Auditors is considered insufficient in this context. The auditors only specialize in looking at the adherence to laws and regulations, which does not in the least guarantee that tax money is spent for society in an economically efficient way, supplying "value for money". What can be observed here is an *economic turn* in scientific quality assurance (cp. Münch 2014: 53ff.).

The Court of Auditors has not traditionally based its inspection on scientific criteria either, but solely on bureaucratic ones, which are progressively being replaced by economic principles in the hope of an increased supply of "value for money". At this point, monitoring undergoes an essential change. While the

bureaucratic control exerted by the Court of Auditors has left the scientific field completely unaffected, economic control intervenes much more strongly in the field of teaching and research.

The characteristic neoliberal mistrust in the performance and capacity of public institutions, exacerbated by the media, requires a system of indicators permitting the observation and control of performances and accomplishments in order to provide a legitimation towards the general public in the external relationship, and to ensure the monitoring of teaching and research with the help of quality management tools in the internal relationship. Since, unlike traditional bureaucratic control, quality management seeks to produce performances and achievements in the field of teaching and research that can be visualized by scores, the process of scientific quality assurance tends to be superimposed or colonized – or even completely displaced – by the economic one (Janssen and Sass 2008). In other words: Bourdieu's homo academicus turns into a homo oeconomicus. Biswanger's (2010: 67–91) measurability illusion is corroborated by the fact that the score-based control does not involve a continuous readjustment of supply and demand, as would be the case on an ideal market, facilitated by such a market's price-performance mechanism. Instead, the activities are strongly focused on the fulfilment of the requirements set by central instances and implemented in the scores. The more complex the performances to be achieved, and the farther they go beyond the items measured by the scores, the greater the resulting performance deficits. This culminates in exactly those mismanagements familiar to us from centralized socialist planned economies. Too many of the items set and rewarded by the scores are produced, while many other items are not produced at all, despite being in demand. As long as there are still chances to maintain inward scope for variation while simultaneously presenting scores to the outside world, scientific practice preserves at least a part of its genuine quality. The tighter the control, the more scientific practice becomes colonized and disciplined by the score system (Power 1997). It ultimately turns into a Foucaultian panopticon of science (Foucault 1977; Sauder and Espeland 2009).

The university then approaches the model of a total organization observing and controlling the lives of its members, right down to the smallest detail. Whatever fails to comply with this schematism is forced to disappear, unless it is maintained in unobserved 'preservation' zones in the underground life of the organisation. In science, these zones include all those teaching and research activities that do not yield any points, e.g., the composition of expertises, papers in edited volumes, reviews, newspaper articles, and monographs, or simply discussions with students in the cafeteria. As Parsons and Platt (1973) made unmistakeably clear, learning, teaching, and research can only occur in a protected space under the trusteeship of an autonomous academic community (cp. Bourdieu 1989: 660f.). The panopticon of external quality assurance currently under construction is the death of academic freedom and of the unhindered progress of knowledge.

No system of scores is able to sufficiently reflect the continuously changing performance spectrum of fairly complex activities; it will invariably lag behind the requirements. And as this is an immutable fact, it has a restricting effect on the

activities themselves, ossifying them, forming a schematism that results in massive performance deficits. This is especially true in the context of teaching and research.

Rankings in particular aggravate the constrictive effects of scoring systems on academic practice. Their addressee is the public, which means that they are part of the media system and subject to its laws (Münch 1991, 1995; Luhmann 1996; Franck 1998; Bourdieu 1998). They must produce sets of scores that are comprehensible at a single glance, enabling the transmission of readily intelligible messages. They require tables that display the individual ranks of the universities, schools, or departments, which is more interesting and easier to understand than excessive information on their specific unique features. With the help of rankings, the investors (the state, private contributors and students paying their tuition fees) receive publicly consecrated assessments on the return on investment to be expected of a specific university degree. Since rankings create a social fact reproducing itself from publication to publication, they provide investors with sufficiently reliable information. They also largely generate the reality they pretend to measure. They produce the same effects as self-fulfilling prophecies (Merton 1968), creating reactivity in the sense that everybody, producers and consumers, adapts their behavior to the figures, and everything else becomes invisible (Espeland and Sauder 2007, 2009). Therefore, there are no noteworthy positional changes in the ranking over time once it has been set. An essential function of rankings is thus to ensure for investors stable returns on their commitment. Correspondingly, they are also of considerable and verifiable appeal to potential investors, thus countering academic criticisms of their over-simplification of reality.

In Germany, this was the reply given by the Bertelsmann Foundation's Center for University Development (CHE) and their media collaborator ZEIT-Campus to the criticism of their university ranking system expressed by the Executive Board of the German Sociological Association (DGS 2012; CHE Ranking 2012). The fact that the CHE university ranking is carried out on behalf of the German Rectors' Conference reveals a growing conflict between the scientific community and university management departments. The main authorities at the autonomous pole of the academic field are forced to fend off the invasion of schematised and rankable performance assessments encouraged by the German Rector's Conference and university management. They are developed according to media logic, and are unable to fulfill the actual requirements of intra-academic performance assessment. Rankings in the academic field give credence to Campbell's Law (1976), which states that performance assessment based on scores corrupts behavior to the extent to which status and remuneration are linked to the parameters of the performance assessment. This corruption of behavior becomes more widespread the more distant the performance assessment is from the activity itself, and the more status and remuneration are linked to it. Since rankings are largely subject to the attention economy (Franck 1998) of the media system, and have to work with simple scores, they are especially distant from 'real' academic practice.

In his presidential address at the annual meeting of the American Sociological Association (ASA), Michael Burawoy (2005) complained that American sociology was dominated by only one of four equally important variants of sociology, namely by the professional sociology of peer reviewed journals – pure sociology for sociologists, and scarcely relevant for questions going beyond the specialist field, let alone for questions of public and further societal interest. According to Burawoy, it has displaced all other variants of sociology: critical sociology, with a focus on concept and theory work and on the self-reflection of the discipline; policy-oriented sociology aiming at a transfer of knowledge to practice; and public sociology, which addresses the communication of knowledge to the public and provides analyses of contemporary culture (*Zeitdiagnosen*).

The sociology research rating reveals that these variants are still present in Germany, but it also indicates that a consistent and continuous adherence to the rating's dominant standard is destroying any chance of their survival. Research institutions that have afforded plurality of practice to all these variants of sociology were clearly at a disadvantage compared to research institutions that had one-dimensionally specialized in professional sociology. The assessments of research institutions which facilitated conceptual and theoretical work, the transfer of knowledge to practice, and cultural analysis; all clearly suffered in comparison to research institutions that had practiced purely professional sociology. Practicing these kinds of sociology drags down the overall assessment of research institutions, so that they are in danger of being closed by a strategically active management department: What has saved them so far is only the continued existence of a disconnection between formal structure and actual active structure (Meyer and Rowan 1977). The research rating of the Science Council that is particularly close to science thus cannot evade the maelstrom of destroying diversity through standardization. This adherence to the scientific logic is an important factor in enablings the uniform and standardized side of science to dominate over its diverse and creative side, since – unlike the diverse side – it is much easier to assess *with the tools of science themselves*, i.e., according to uniform standards.

So, if even a laborious and relatively complicated procedure such as research rating represents a substantial obstruction to diversity, this will be even more true of any type of ranking that inevitably has to standardize and simplify the process even further. What is hindered in its further development by standardization and simplification is nothing less than the progress of knowledge itself (Espeland and Sauder 2009). Here, we observe a variant of Mathias Binswanger's (2010: 92ff.) motivation illusion involved in the implementation of standardized assessment procedures. The competition for scores, encouraged by incentives, replaces intrinsic motivation with its extrinsic form (Frey 2006). This entails a loss of the creative potential involved in intrinsic motivation and thus a libido transformation of scientists' habitus.

From Research in Small Teams to Research in Large Scale Collaborative Units: The Third-Party Funded University

In the United States, the major responsibility of university administrations today are raising sponsorship money for asset growth, its profitable investment, and its investment in the improvement of their department's prestige through the appointment of promising junior scientists and renowned professors. Their achievements are measured by the amount of funding attained yearly, and by the return on investment in terms of enhanced prestige, measured in the ranking position of the university's departments and schools. The intensification of the competition for funds entails an increasing interest on the part of university management in capital growth, fueled by extensive third-party fund raising. Industrial funds have proven to be particularly lucrative in this regard: The US $500 million invested by BP into the establishment of an Energy Bioscience Institute at UC Berkeley in 2007 are evidence of the success of this strategy (Sanders 2007). As a result, there is a tendency towards a targeted support of departments capable of attracting such amounts with their research activities. What is researched therefore depends increasingly on the third-party funding it yields. When looking for funds from industry, support is preferably allocated to those projects that promise economic benefits. Consequentially, research occurs in great proximity to the existing industrial structure, and thus loses part of its potential to renew science in and of itself, independent of any industrial structure. An environment conducive to such renewal would necessitate greater distance from existing external interests and heteronomous demands. Any type of research activity with no immediate relevance for industry is marginalized all the more. This problematic side of the growth of third-party funds as the primary target of the departments' research agenda has been investigated in the USA under the keyword of "academic capitalism" (Slaughter and Leslie 1997; Slaughter and Rhoades 2004; Berman 2012; Münch 2016). In this context, the contract concluded between UC Berkeley and the Swiss pharmaceutical group Novartis in 1998, spanning a 5-year duration and involving US $25 million, attracted particular attention (Rudy et al. 2007); this was still a modest amount compared with the US $500 million contract concluded with BP in 2007 (Sanders 2007). Particular criticism was provoked by the fact that Novartis was represented in the five-person research committee of the microbiology department by two members.

However, funds from industry are not generally more restrictive with regard to freedom of research than public funds. Applying for funds from the American National Science Foundation (NSF) typically requires one to comply with strict rules, which may actually result in less freedom for exploration than industrial funds given to a renowned scientist without obligation to describe exactly what he or she wants to investigate and how he or she plans to proceed (cp. Evans 2010). Greater leeway in research funded by industry seems to be a privilege of scientists at the most prestigious institutions and represents high institutional symbolic capital, while their colleagues at the less prestigious institutions are forced

to provide services which are more directly oriented to the interests of the sponsor (cp. Wieczorek et al. 2017).

Particular criticism against the backdrop of the increasing pressure of acquiring external funds is directed at the extraordinary growth of an expensive university administration with presidents, provosts, deans and "deanlings" pursuing their own accumulation of power and wealth, with the help of a subordinated and disempowered research and teaching staff. Some critical voices have determined that scientists have to generate a research funding overhead of up to 80%, to allow the administration to glorify in with prestigious construction projects, and to increase their salaries way above the salaries of average professors (Tuchman 2009; Ginsberg 2011).

Unlike their US counterparts, university management in Germany does not have the opportunity to raise funds from sponsors on a large scale. Under public pressure – exacerbated by the neoliberal reform agenda – they are all the more reliant on their faculty professors to present visible success in order to acquire third-party funds. For this purpose, quality management based on economic logic provides instruments for target agreements and the performance-oriented distribution of financial means (performance-oriented remuneration). The coordinated programs of the German Research Foundation (DFG) and the Excellence Initiative of the federal and state governments have supplied the tools for raising third-party funds on a large scale. Altogether, 59% of the DFG budget is spent on collaborative research (DFG 2012: 37). Such collaborative research can best be realized at larger sites, since they are the ones who possess the required critical mass. Accordingly, the quality of equipment available to scientists is highly correlated with the generation of third-party funds, which means that the competition for third-party funds is frequently decided in advance and thus unnecessary, needed only for legitimation purposes, if at all (Münch 2014: 190ff.).

One serious effect of this preference for large scale collaboration in research in the allocation of major third-party funding are the growing legions of research assistants, who conduct their research work over many years under the direction of their professors with only meagre prospects of being promoted to a professorship. In the first round of the excellence initiative, 92% of the staff resources were invested in junior staff positions, mostly for professorial research assistants. At German universities, we find a personnel structure comprising only 15% professorships, but 85% positions for research and/or teaching assistants, which is unique in international comparison. In the USA, the proportion is reversed, according to a recent publication of the *Konsortium Bundesbericht wissenschaftlicher Nachwuchs* (*Federal Report on Junior Academics*) (2013: 15, Fig. A1–8). (However, in the USA, the so-called adjunct faculty – fixed-term teaching staff – has substantially grown with the expansion of business managerialism, which is not represented in the statistics of this report. It is estimated that the ratio between regular faculty and adjunct faculty at US research universities has inverted from 70:30 to 30:70). In Germany, the enormous increase in third-party university funding achieved by strategic management therefore engenders a structure which inhibits innovation more than at any time in the past, namely the oligarchy of university chair holders,

who have increasingly turned into managers, no longer performing their own research activities, but chiefly involved in the acquisition of third-party funds for the further employment of their staff. This is contrary to two requirements essential for the continuous renewal of science: early independence for junior researchers, with rapid generational change (Ben-David 1971[1984]), and research in small teams with secure and flexibly applicable funding (Heinze et al. 2009).

Conclusion

Just like any other field, science develops between two poles: the pole of autonomy and the pole of heteronomy. In the scientific field, the pole of autonomy is supervised by the scientific community, and this is where genuinely scientific competition takes place; internal quality assurance is situated at this pole, and research advances the progress of knowledge. It provides the basis for science to unfurl in the tension between two inner poles: The competition for both progress of knowledge and for reputation, driven by the tension between collegiality and competition; for both equality and differentiation of reputation based on performance; for quality assurance derived from the tension between the diversity of ideas and the uniformity of the methodical standards; in sum, research which balances equality and hierarchy, spontaneous and strategic cooperation, freedom and constraint resulting from the subordination to methodologically standardized research programs.

The pole of heteronomy is home to the entrepreneurial universities involved in the institutional competition for monopoly rents, to the audit university, which aims to establish external quality assurance through indicators, and to the third party-funded university, which subjects research to strategic planning, strict management, and forced cooperation within large scale collaborative units. The neoliberal agenda assigns more significance to the heteronomous side leading to a situation in which – from the perspective of the autonomous pole –those strategies which are adjacent to the heteronomous pole gain in importance: Competition takes precedence over collegiality, uniformity over diversity, and constraint over freedom.

References

Baier, C., & Münch, R. (2013). Institutioneller Wettbewerb und Karrierechancen von Nachwuchswissenschaftlern in der Chemie. *Kölner Zeitschrift für Soziologie und Sozialpsychologie, 65*(1), 129–155.

Baier, C., & Schmitz, A. (2012). Organisationen als Akteure in sozialen Feldern – Eine Modellierungsstrategie am Beispiel deutscher Hochschulen. In S. Bernhard & C. Schmidt-Wellenburg (Eds.), *Feldanalyse als Forschungsprogramm – Der programmatische Kern* (pp. 191–220). Wiesbaden: VS.

Ben-David, J. (1971/1984). *The scientist's role in society*. Chicago: University of Chicago Press.

Berman, E. P. (2012). *Creating the market university: How academic science became an economic engine*. Princeton: Princeton University Press.
Binswanger, M. (2010). *Sinnlose Wettbewerbe. Warum wir immer mehr Unsinn produzieren*. Freiburg: Herder.
Bornmann, L. (2010). Scientific peer review. *Annual Review of Information Science and Technology, 45*, 199–245.
Bourdieu, P. (1975). The specificity of the scientific field and the social conditions of the progress of reason. *Social Science Information, 14*(6), 19–47.
Bourdieu, P. (1988). *Homo Academicus*. Stanford: Stanford University Press.
Bourdieu, P. (1989). The corporatism of the universal: The role of intellectuals in the modern world. *Telos, 81*, 99–110.
Bourdieu, P. (1998). *On Television* (P. P. Ferguson, Trans.). London: New Press.
Burawoy, M. (2005). For public sociology. *American Sociological Review, 70*(1), 4–28.
Burris, V. (2004). The academic caste system. Prestige hierarchies in PhD exchange networks. *American Sociological Review, 69*(2), 239–264.
Campbell, D. T. (1976). *Assessing the impact of planned social change*. (Occasional Paper Series No. 8). Western Michigan University, Kalamazoo. Evaluation Center. Retrieved July 17, 2012, from www.eric.ed.gov/PDFS/ED303512.pdf
CHE-Ranking. (2012). *Methodische Genauigkeit und öffentlicher Nutzen des CHE-Hochschulrankings. Erwiderung des CHE auf die Stellungnahme der DGS zum CHE Hochschulranking*. Gütersloh: CHE.
DFG (Deutsche Forschungsgemeinschaft) (Ed.). (2012). Förderatlas 2012. Kennzahlen zur öffentlich finanzierten Forschung in Deutschland. Bonn.
DGS (Deutsche Gesellschaft für Soziologie) (Ed.). (2012). *Wissenschaftliche Evaluation Ja – CHE-Ranking Nein*. Retrieved July 29, 2013, from http://www.soziologie.de/de/nc/aktuell/che/aktuelles-single-view/archive/2012/06/01/article/wissenschaftliche-evaluation-ja-che-ranking-nein-1.html
Espeland, W. N., & Sauder, M. (2007). Rankings and reactivity. How public measures recreate social worlds. *American Journal of Sociology, 113*(1), 1–40.
Espeland, W. N., & Sauder, M. (2009). Rankings and diversity. *Southern California Review of Law and Social Justice, 18*(3), 401–435.
Evans, J. (2010). Industry induces academic science to know less about more. *American Journal of Sociology, 116*(2), 389–452.
Foucault, M. (1977). *Discipline and punish*. London: Penguin Books.
Franck, G. (1998). *Ökonomie der Aufmerksamkeit: ein Entwurf*. München: Carl Hanser.
Frey, B. S. (2006). *Evaluitis – Eine neue Krankheit* (Working Paper No. 293). Institut für empirische Wirtschaftsforschung Zürich.
Ginsberg, B. (2011). *The fall of the faculty*. Oxford: Oxford University Press.
Hazelkorn, E. (2011). *Rankings and the reshaping of higher education: The Battle for world class excellence*. Basingstoke: Palgrave Macmillan.
Heinze, T., Shapira, P., Rogers, J. D., & Senker, J. M. (2009). Organizational and institutional influences on creativity in science. *Research Policy, 38*(4), 610–623.
Jansen, D., Wal, A., Franke, K., Schmoch, U., & Schubert, T. (2007). Drittmittel als Performanzindikator der wissenschaftlichen Forschung. Zum Einfluss von Rahmenbedingungen auf Forschungsleistungen. *Kölner Zeitschrift für Soziologie und Sozialpsychologie, 59*(1), 125–149.
Janssen, J., & Sass, E. (2008). Strategisches prozessorientiertes Qualitätsmanagement an der Hochschule (Fuldaer Modell). *QiW-Qualität in der Wissenschaft, 2*, 8–12.
Kaplan, R. S., & Norton, D. P. (1993, September/October). Putting the balanced scorecard to work. *Harvard Business Review*, 2–16.
Konsortium Bundesbericht wissenschaftlicher Nachwuchs (Ed.). (2013). *Bundesbericht wissenschaftlicher Nachwuchs*. Bielefeld: W. Bertelsmann Verlag.
Laffont, J. J., & Martimort, D. (2009). *The theory of incentives: The principal agent model*. Princeton: Princeton University Press.
Luhmann, N. (1996). *Die Realität der Massenmedien*. Wiesbaden: Westdeutscher Verlag.

Merton, R. K. (1968). The self-fulfilling prophecy. In R. K. Merton (Ed.), *The sociology of science* (pp. 424–436). Chicago: University of Chicago Press.
Merton, R. K. (1973[1942]). The normative structure of science. In R. K. Merton (Ed.), *The sociology of science* (pp. 267–278). Chicago: University of Chicago Press.
Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations. Formal structures as myth and ceremony. *American Journal of Sociology, 83*(2), 340–363.
Münch, R. (1991). *Dialektik der Kommunikationsgesellschaft*. Frankfurt am Main: Suhrkamp.
Münch, R. (1995). *Dynamik der Kommunikationsgesellschaft*. Frankfurt am Main: Suhrkamp.
Münch, R. (2014). *Academic capitalism. Universities in the global struggle for excellence*. London/New York: Routledge.
Münch, R. (2016). *Academic capitalism*. Retrieved August 11, 2017, from http://politics.oxfordre.com/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-15.
Münch, R., & Baier, C. (2012). Institutional struggles for recognition in the academic field: The case of university departments in German chemistry. *Minerva, 50*(1), 97–126.
Meyerson, R. B. (1982). Optimal coordination mechanisms in generalized principal-agent problems. *Journal of Mathematical Economics, 10*(1), 67–81.
Parsons, T., & Platt, G. (1973). *The American University*. Cambridge, MA: Harvard University Press.
Porter, T. M. (1995). *Trust in Numbers: The pursuit of objectivity in science and public life*. Princeton: Princeton University Press.
Power, M. (1997). *The audit society: Rituals of verification*. Oxford: Oxford University Press.
Radder, H. (2010). *The commodification of academic research*. Pittsburgh: University of Pittsburgh Press.
Rudy, A. P., Coppin, D., Konefal, J., Shaw, B. T., Eyck, T. T., Harris, C., & Bush, L. (2007). *Universities in the age of corporate science. The UC Berkeley – Novartis controversy*. Philadelphia: Temple University Press.
Sanders, R. (2007, February 1). BP selects UC Berkeley to lead $ 500 million energy research consortium with partners. Lawrence Berkeley National Lab, University of Illinois. *UC Berkeley News*.
Sauder, M., & Espeland, W. N. (2009). The discipline of rankings: Tight coupling and organizational change. *American Sociological Review, 74*(1), 63–82.
Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Baltimore/London: The Johns Hopkins University Press.
Slaughter, S., & Rhoades, G. (2004). *Academic capitalism and the new economy. Markets, state, and higher education*. Baltimore/London: The Johns Hopkins University Press.
Tirole, J. (1999). Incomplete contracts: Where do we stand? *Econometrica, 67*(4), 741–781.
Tuchman, G. (2009). *Wannabe U: Inside the corporate university*. Chicago: University of Chicago Press.
Wieczorek, O., Beyer, S., & Münch, R. (2017). Fief and benefice feudalism. Two types of academic autonomy in US chemistry. *Higher Education, 73*(6), 887–907.
Wildavsky, B. (2010). *The great brain race. How global universities are reshaping the world*. Princeton: Princeton University Press.
WR (Wissenschaftsrat). (2008). *Pilotstudie Forschungsrating. Empfehlungen und Dokumentation*. Köln: Wissenschaftsrat.