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Organization of Research: From bureaucratic temples to creative communes

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> *"Precision, speed, unambiguity, knowledge of files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration."*
>
> — *Max Weber*

In this chapter we take a closer look at the organization of universities, which we define as bureaucratic temples — *bureaucratic* because of their hierarchical and rule-based administration and *temples* because of the quasi religious belief in icons and path-dependent epistemic practices of its research staff. We offer an explanation of how this type of organization emerged and how it impedes the impact of scientific

work. We use a stereotypical template of a bureaucratic temple, knowing that research universities differ in size, profile and geographical location. Furthermore, we focus on the organization of research at universities and will address the organization of teaching only marginally, as we will dedicate a separate chapter to it. Hopefully, there is no university that perfectly matches the cliché of a bureaucratic temple. However, using this cliché, allows us to carve out crucial issues of today's organization of academic research in general. Experience tells us that colleagues around the world, regardless of their career level, geographic location, and field of research or position within a research organization, struggle with their respective bureaucratic temples. We hope that after reading this chapter you too will come to the conclusion that we need to rethink the organisation of academic knowledge creation in order to provide answers to the challenges of a modern knowledge society.

The Emergence of Bureaucratic Temples

The development of the modern university as we know it today came about with increased public investment from the 1950s onwards. Another World War had just been fought and many countries were entering a scientific arms race. The United States pioneered this development. In 1948 the National Institutes of Health were established followed by the National Science Foundation (NSF) two years later. After the Sputnik shock from 1957, the funds for the NSF increased twelvefold from a good 40 million to almost 500 million within a decade (Hirschi, 2018). The implicit expectation of these investments was that research would enhance national competitiveness in business,

politics, and the military (which it probably did). The increased investments entailed two further developments that shape research to this day: first, the increasing bureaucratization of universities and second, an increasing disciplinary specialisation. The two developments complement each other and are essential for the emergence of bureaucratic temples.

The Bureaucratization of Science

Organizational sociologists refer to it as 'administrative bureaucratization', when administrative positions and activities grow quicker than the productive activities of a given organization (Coccia, 2009, Gornitzka, Kyvik, & Larsen, 1998). A disproportionate growth of the administrative wing of universities has been reported in many countries, including Germany (Brembs & Brennecke, 2015), Italy (Coccia, 2009) (Coccia 2008), Finland (Visakorpi, 1996), Sweden (Lane, 1990), and Norway (Gornitzka et al., 1998). In the UK, numbers from the Higher Education Statistics Agency (HESA) show that the number of research managers has increased about 33 per cent between 2003 to 2008/09, while the number of research staff increased by 10 per cent from 106,900 to 116,495 and the number of students rose by 9 per cent in the same period (Cooke & Kitagawa, 2013). This development is reinforced because administrative posts, unlike research posts, are less likely to be temporary. Other studies discern a significant amount of administrative workload for academics at universities (e.g., Gornitzka et al., 1998, Coccia, 2009). A survey of the Young Academy of Europe (Susi, 2018) examined career factors and working conditions of early-stage researchers throughout Europe.

They reported that, on average, only 30 percent of working time of researchers is spent on research, while administration takes up 19 percent, and teaching occupies 15 percent of their time. Now it can be argued whether a larger administration at universities requires more or less administrative effort on the part of the researchers. In any case, administration is an essential task of universities, and in terms of man-hours it is today probably even more important than teaching.

The bureaucratic logic at universities follows a simple rationale: The more public resources academia uses, the more effort is put into administering these resources—all in the service of accountability. Shore and Wright (2015) refer to this as the audit culture, meaning that auditing performance represents one of the most important and defining features of the contemporary governance of universities. In universities, this bureaucratic need for accountability is not only reflected in the increase in administrative staff but also in the administrative burdens researchers experience.

It is the elephant in the room that a researcher spends a significant amount of time navigating through the bureaucratic labyrinth, searching for grant money, administering resources, and writing project reports that do not have any academic impact at all. Annual reports are often thick stacks of paper that lists the faculty publications, press mentions, and every single public speech the institution's researchers gave. And that is perse nothing unusual: Public authorities need to be accountable for the money they spend. According to du Gay (2000) they have a "state interest" — an interest that goes beyond mere management and which is dedicated to

the preservation of the state and its institutions. Universities, one could argue, should however legitimize themselves first and foremost to the public and not to the state. Contemporary concerns with impact and societal relevance should not obscure the state's responsibilities; but vice versa, the state's responsibilities should not obscure the "public interest" that universities have. They have, at least in Western democracies, a deliberative function by cultivating emancipated citizens and contributing to a common knowledge base.

Weber assumed that bureaucracy is a modern, rational, and efficient administrative design. The bureaucratic ideal that he advocated had something empowering, because social advancement was regulated by individual capacity and independent from, for example, feudal ancestry. Nonetheless, bureaucracy came at the expense of individual freedom. Weber compared working in bureaucratic organizations to an iron cage – actors in these organisations are specialised in exactly one activity. Later, scholars such as Merton (1940) and Crozier (1964) characterized bureaucratic organizations as slow and inefficient and therefore an unsuitable organizational form for science. Coccia (2009) observed that the bureaucratization of Italian universities actually came with lower efficiency and less research productivity (in terms of research outputs). It is obvious to most people working in academia that the bureaucratic order of research is not necessarily conducive to its productivity, not to speak of its creativity. Academia rather needs a form of organization that is enabling and not pestering. But somehow the system as a whole is struggling to come up with such organisations.

Academic research, of course, should not only be about productivity and efficiency. First and foremost it is about creativity, its capacity to produce novel insights. Yet also with regard to their creative capacity, bureaucratic temples are largely unsuitable forms for the organization of research. Here, too, it is worth taking a look at the second half of the 20th century. As a consequence of the increased investments in research, we witnessed an explosion of new academic disciplines, which obviously had to be organized (Tenopir & King, 2014). Bureaucratic temples facilitate the organization of disciplines. Through their hierarchical structure they consolidate disciplines but also protect schools of thought. This is where bureaucratic temples become religious.

To make this argument clear, we need to take a step back and ask ourselves what distinguishes religion from science. They differ fundamentally in one regard: religion is a regime of *faith* and science is a regime of *doubt*. Doubting is the core business of research. It is reflected in Popper's critical rationalism, which proceeds from the assumption that no knowledge is ever the final truth and always needs to be open to critical examination (Popper, 1959). Instead of verifying assumptions about reality, Popper takes the stance that scholars should strive for falsifying assumptions about reality. This is reflected in Robert K. Merton's four norms which aim to comprise the ethos of science in modern democracies.[1] One of the Mertonian norms, *organized skepticism*, proposes that skepticism is a shared intellectual attitude among scientists

[1] Besides organized skepticism, these are communism, universalism and disinterestedness.

that translates into a methodological and an institutional mandate. Scientists should not only question their knowledge base but also the social structures that shape it.

The social structure of bureaucratic temples make it ever harder to question knowledge as it is often protected through devout boundary work. A good example of boundary work is the practice of faculties to put out journal lists, which group the "best" journals in a particular field (e.g., A-Journals, impact-factor, basket of seven). Intended to provide orientation for researchers and to prevent nepotism and to outline a horizon of expectations, these lists also make an implicit but clear statement about what is irrelevant. To show the absurdity of this concept of scholarly relevance, one has to think of the following situation: A social scientist repeatedly publishes articles in top psychology journals that are not on her faculties' list (e.g., by using panel data on personality factors). Arguably this researcher is "super excellent" (do not get us started on the concept of excellence) because not only does she (presumably) understand her field, she is even able to make a significant contribution to another field. In tenure decisions, however, these publications might not count at all, because they are not on the list that her faculty put out to define the frame in which organized skepticism is allowed to happen.

In these instances, science, the *business of questioning*, becomes a *business of believing*, it becomes a religion that protects its realm. Here, skepticism perverts to reactionism, when intellectual paradigms but also established structures such as scholarly output formats, career paths and organizations are beyond what academics typically dare to

question. The silo organization of faculties is the foundation of the confessional order of the university. It prevents meaningful exchange and natural knowledge flows with colleagues. Organized skepticism is prevented through the organization of knowledge at universities.

The Organized Stupidity of Bureaucratic Temples

Weber saw the bureaucratic organization as a finely tuned machine and a rational and efficient way to organize human activities, but he also saw the dysfunctional aspect of the abandonment of individual freedom. In that line, Merton (referring to Veblen) diagnoses "trained incapacity" as a typical feature of bureaucrats — a state when specialized skills become irrelevant after circumstances change (1940). In academia, trained incapacity is particularly severe because it reflects on the adaptive capacity of its self-governed institutions. This concerns both, the administrative part of universities as well as the productive part (e.g., research and teaching). Bureaucratic temples are in this regard the worst possible organizational structure for an institution whose core task is to produce new and socially relevant knowledge. They motivate their presumably smart members to act stupid collectively, a dilemma that we refer to as *organized stupidity.* One cannot overemphasise the irony of the fact that universities perform the magic trick of making a group of smart people act stupid collectivly. Organized stupidity is a major reason why academia cannot unfold its full impact and it is ubiquitous in bureaucratic temples, in their cumbersome structures, inefficient

workflows, and path-dependent value system. What are symptoms of organized stupidity?

Structure: The Peter Problem

The Canadian educational scholar and sociologist Laurence J. Peter observed that employees are regularly promoted based on their success in a previous job until they reach a position at which they are no longer competent and therefore remain. In organization theory, this phenomenon is known as the Peter Principle; it is closely related to what Merton describes as trained incapacity. In academia a system arose which can only be described as the peter principle on steroids, a system in which the most gifted employees are regularly promoted to positions for which they have no experience or training. Your typical professor probably started as a gifted PhD student and went on to become a productive PostDoc that published important works and won awards and grants. She eventually got rewarded with her own chair. But now this professor is so occupied with managing grants, managing people, sitting in endless meetings, and opening conferences that she can no longer do what she is best at: research. Very few academics go the opposite way and fight the additional administrative and representative burden that comes with more advanced job-titles to make at least some room to continue their own research. If you find one: They are to be applauded! It is of course possible that by sheer happenstance a good researcher is also a good manager. Yet there is no inherent logic that scientific greatness translates into managerial competence. Which, in summary, means that the most creative minds

in the academic system are torn out of their jobs at the time of their greatest creative productivity and instead perform some other task for which they have no training or experience. It is as if the Chicago Bulls would have benched Michael Jordan in his prime so he can do more interviews, manage the team, and recruit young players instead of playing basketball himself. Bureaucratic temples foster this absurdity: Those who are essential for impact to emerge are propelled away from where they can make an impact. Laurence J. Peter would be very proud that his principle, which he wrote as a satire, is ever-present in the academic world.

Workflows: The Thousand Islands Problem

Increasingly, scientific problems require skills that go beyond what a single person can cover. This is known as the collaboration imperative, a situation in which different professional perspectives need to come together to make a meaningful contribution. This becomes obvious in the fact that high impact articles are rather written by heterogenous author teams (Leahey, 2016). Bureaucratic temples, however, are characterized by small organizational units (e.g., faculties or institutes) that are clearly separated and rarely overlap. Their boundaries are hard to overcome as they are secured by different value systems (e.g., “Your publications are not on our journal list”), different tin gods (e.g., “We are Luhmanians”), and different interpretations of what is considered good scientific practice (e.g., “You could not publish this kind of data in my field”). Here, trained incapacity is firmly anchored in a rigid organisational structure

that is anything but agile. The low adaptation of interdisciplinary collaboration in many universities is reflected in the following two questions:

- How often does a researcher from one faculty work with a researcher from another faculty?
- How often is a researcher from another field hired for a faculty position?

Bureaucratic temples legitimize unnecessary disciplinary demarcations. From an administrative point of view they are hierarchical and strictly linear; from an organizational sociological point of view they are strangely decentralized and unconnected. Serendipitous interactions are severely limited by a distributed and confined architecture of universities. Chip-cards, for instance, allow researchers at many universities only access to their own building or even better their own floor. Bureaucratic temples resemble a map of thousands of small islands separated by stormy waters and occupied by tribes reluctant to talk to each other. It is a truly heroic act for a tribal member to jump into the tide and swim to another island – for it is impossible to meet in the middle of the stormy sea. Interdisciplinary work is widely requested and advocated for but it is simultaneously also prevented from happening by a rigid organizational design. If the nature of the problems we encounter in research today are inter- or even transdisciplinary (e.g., climate, migration, poverty, education, digitization), then it is obvious that an organizational structure that prevents productive interdisciplinary dialogues mitigates the impact the organization can have.

Value: The Stupid Proxies Problem

Bureaucratic temples tend to favor quantifiable but often irrelevant or severely flawed proxies to evaluate success. Although the origin of the problem lies much deeper in the academic system, it is bureaucratic temples that enforce what Binswanger (2014) calls "excellence by nonsense". This is evident in all three missions of the university (research, teaching, knowledge transfer). In research, the academic journal article remains the de-facto standard for determining scientific excellence through established (and widely criticised) metrics like the Journal Impact Factor or the Hirsch Index. Godhart's law "When a measure becomes a target, it ceases to be a good measure" is broadly discussed in academia and basically every sane academic agrees that the over-presence of bibliometric metrics is detrimental to the creation of actual scientific value. It is nevertheless exactly what happens today, or as (Alvesson, Gabriel, & Paulsen, 2017) put it: "never before in the history of humanity have so many written so much while having so little to say to so few". There is (of course) nothing wrong with an article per se, even if it is only intended for a small audience. However, the dominance of the article in the academic value system comes with severe opportunity costs (what academics are not doing because they are all busy writing more articles). The behavior appears particularly outdated in the digital age, where scholars have a multitude of formats at their disposal to share and update knowledge and to engage with audiences who are interested (e.g. dynamic texts, videos, software code, research data) but academics collectively ignore these options to make sure they can use whatever research time they are granted to write articles in PDF format (Fecher,

Friesike, Hebing, & Linek, 2017). In bureaucratic temples, the value of teaching is measured by counting student numbers not by investigating the quality of their training. In Germany, for example, it is common practice that universities receive funding for every newly enrolled student, no matter how good or bad their education is. And even if the student breaks off her studies frustratedly, this does not change anything about the proxy of "newly enrolled students". Science communication as the third mission, happens in bureaucratic temples in dedicated departments (e.g., technology transfer and PR offices), but not as an integral part of individual research projects. And because proxies always need to be countable these dedicated university departments focus on those transfer activities that are just that. This means counting spin-offs, patents, and press mentions, which by all means is a very narrow understanding of societal impact. The societal impact of research in this logic is attention (not relevance) and economic activity (not success). What we experience in bureaucratic temples is a simulation and constriction of—scholarly and societal—impact due to the fact that our operationalizations of impact are based on a few, countable but mostly stupid and meaningless proxies for relevance.

Universities need to become creative communes: Free, skeptical, constructive

We observe a peculiar reversal of academic values in bureaucratic temples: Freedom becomes control and scepticism becomes faith. In our view, the ideal organization of academic knowledge must foster freedom and skepticism above all else. It needs to be adaptive, immersed in society and its design must stipulate serendipity. We call this

ideal research organization a *creative commune*. Its core principles are: *adaptive power*, *administrative support*, and *creative skepticism.*

Adaptiveness

Research organizations should be designed to adapt. Imagine an organizational design with research at its core, where teams get together to work on common problems. Individual researchers are not bound to a specific faculty with all their rules and accountability procedures. Instead teams can change from research question to research question, depending on the nature of a problem. They might also work together for some time if that's what's most fruitful.

In creative communes, experienced researchers (what we now call professors or senior PostDocs) become project masters, PhDs become senior apprentices, and students become junior apprentices. Apprentices learn the craft of conducting research on multiple projects including many points of view instead of today's practice of subscribing to a specific school of thought (e.g., "We are are Keynesian economists and that is why we only think like Keynesian economists"). In a bureaucratic temple, organizational members hold specific power based on rank and seniority and not based on the value that they bring to the research team they are engaged with. In creative communes, each person's value comes from his or her individual expertise and their capacity to engage creatively with others to make available the fruits of their individuality.

The only stable units in creative communes are those that deal with recurring tasks. For example, a creative commune would have a variety of “labs” that help foster creative productivity. Imagine a theory lab, a method lab, a design lab, or a transfer lab, where teams could use facilities and engage with experts that help them with their specific tasks. Hierarchies and power in creative communes are in flux. In a research project an established theorist could be in charge of the conceptual framing while a younger colleague could be responsible for the analysis activities of the same project. The typical hierarchical structure common in many universities today, in which a senior researcher acts as a “principal investigator” of more research projects than she can realistically be deeply immersed in, would be replaced by a structure of active engagement and situative ownership.

Administrative support

Instead of asserting administrative control, creative communes fuel discovery through administrative support: accountability is replaced by empowerment. That does not mean that administration is absent in a creative commune but rather that it is embedded in both research and teaching.

Imagine a creative commune in which activities are carried out by a team. Every team comes with a project manager, an expert who is responsible for administering resources and helps manage the workload so that the whole team can jointly achieve the best possible outcome. Administrative employees would cease to exist as an antagonistic counterpart to academic staff, rather they would become an essential part

of creation; they would partake and they would adapt their capacities to the nature of the problem at hand. They would work with the research team and not separately from them in a different building. They would enable and empower them instead of controlling and interrupting them. They would operate at eye level.

Creative skepticism

Creative communes would thrive under the banner of creative skepticism, a principle that tries to devise solutions and critically question them until they work. Creative skepticism can be understood as a future-oriented critical rationalism. However, instead of questioning the existing, it critically examines the new. This comes close to Leibniz' conception of the "best of all possible worlds". That does not mean that research must be applied but that it is open to criticism from multiple perspectives—be it by researchers, practitioners, or society.

Creative skepticism goes hand in hand with a renunciation of idiotic success metrics that prevent real connectivity. Creative communes produce knowledge in any form that is purposeful and that is relevant. This means that research that takes the recipient (yes, even other researchers) seriously and uses the format that is best suited to mediate it. Thus, creative skepticism does not only refer to the body of knowledge but also the social structures that shape it. The centre of the commune must be a welcoming meeting-place—comparable to the Viennese coffee house culture—where everyone can meet and linger, think, and discuss.

The need to reform universities

In many respects, universities today resemble bureaucratic temples. Hierarchies and areas of activities are clearly defined and separated. Decisions are made based on standard protocols and control is exercised through an increasingly comprehensive reporting system. At the same time, walls and hallways are paved with busts, badges and paintings of past academic greats. The religious undertone of our universities radiates into a culture that protects knowledge (and the way it is generated) rather than questioning it. It is dubious how this structure will enable anyone to tackle the complex problems of our time.

It is about time that universities shake off the dust of the past, take their members seriously as responsible creators, free them from the chains of overboarding bureaucracy and accountability, empower them, unite them purposefully and let them create. Today's emphasis on plannability needs to give way to serendipity by offering a supportive environment for creation and more space for exploration and exchange. It is about time for a new kind of university that fosters a new guild of academic craftsmanship, free of the divisive hierarchy pretensions that endeavoured to raise a prideful barrier between faculties and disciplines, senior and junior researchers, managers and researchers.

Let's strive for, conceive, and create new universities for the future that will unite disciplines, topics, and all kinds of knowledge stakeholders and which stands as a clear symbol of creative skepticism, a much needed position in times of overabundance of

information, confusion about the truth, and mounting societal problems. It gives orientation. It is responsive to problems. It offers evidence and expertise. In a nutshell: The university of the future has impact at its core.

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