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Spaces of Research: The University

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ABSTRACT **This contribution explores the significance of place and space for doing science. Specifically, it asks how universities become places where research is enabled and driven forward. First, the complex character and fuzzy boundaries of universities are discussed. Second, three dimensions of the university as a space are differentiated: the socio-structural, the semantic-symbolic and the physical-material. Finally, the concept of "research atmospheres" is introduced to foreground the third dimension, which has often been neglected in academic and public debates about the university.**

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What is the significance of place and space for doing science?

How do universities (and other knowledge producing organizations) become places and spaces where science is lived and research is driven forward? How relevant are the built and lived environments in which researchers and students meet and work? One of the first things that springs to mind when we imagine the university as a space of research is venerable and awe-inspiring university buildings and tranquil campuses. In connection with such imaginations, research is often understood—particularly in public perceptions—as a detached and contemplative activity (Kaldewey 2014). However, the places and spaces in which research is conducted are highly heterogeneous and differ depending on the disciplinary context. In the natural sciences, we typically think of the laboratory. Historical and popular imaginations often picture scientists in laboratories, and indeed this is the environment "discovered" by early sociologists of science as the key site where one can observe "science in action" (Latour 1987) and the "manufacture of knowledge" (Knorr-Cetina 1981). In the humanities and social sciences, by contrast, we do not find an equivalent archetypical space. Of course, there are libraries and archives, and in the empirical social sciences there is the "field" out there in the

real world. Most research, however, takes place in rather ordinary spaces, such as offices or meeting rooms. Across disciplines, many of these settings are in one way or another embedded in universities. There are also other spaces of research, such as non-university research institutes, but even these usually maintain critical links with the university (see ❇ Non-University Research). In what follows, the relationship of place, space, and the university is discussed in three steps.

What is a university and where do we find it?

Universities are not easy to define if we try to approach them as tangible spaces. Of course, there are campus universities, such as traditional colleges in Anglo-Saxon countries or the large-scale reform universities of the 1960s, in which the unity of the university is spatially represented in an identifiable ensemble or even a single building. What is more typical for European universities, however, is that they are integrated into urban patterns and spread across a city in various ways (Bott 2018). Imagine a tourist who is spontaneously looking for the university in the city she is visiting. She might find a representative main building, a former palace for example, or some landmark building such as a big library or a prestigious institute. The universities themselves often choose to reference such buildings as a visual strategy in order to identify themselves at a glance on their websites. However, whether these buildings are spaces and places of research is another question. It is relatively easy to come across lecture halls where science is taught (but is it also lived there?); it is easy to find central administrative facilities, where science is managed (but do the administrators really manage research or only the organizational context?) and one can search for libraries and other semi-public spaces (but again it is not easy to clarify whether these are research spaces or learning spaces).

Such considerations boil down to the question of where research actually takes place. In the late 1970s, scholars from the emerging field of Science and Technology Studies (STS) found a very plausible answer, as already mentioned above: in the laboratory! The methodological innovation at that time was the idea of understanding the laboratory as the natural habitat of scientists (more precisely, of natural scientists). Scholars such as Bruno Latour (1987) or Karin Knorr-Cetina (1981) saw themselves as anthropologists who visited this place in order to study an unknown tribe, understand its culture, its practices and rituals, and thus discover how facts are produced and knowledge is generated. The point of these so-called laboratory studies was to examine the “sacred place” of science like any other site of a foreign culture. In the end, the sociologists and anthropologists discovered that there were no superhuman beings working there, just normal people with their own values and interests, and that scientific findings could be understood as a product of social and cultural practices.

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The idea of the laboratory as the ideal and at the same time "worldly" place of knowledge production still characterizes the self-image of much scientific research today. But what about the other spaces of knowledge production, such as libraries and archives (see ❇ Spaces of Research: The Library), seminar rooms and lecture halls (see ❇ Lecture and Seminar), places of exchange (see ❇ Office Hours), conference centers, trains and airplanes, or the home office that has become a key workplace after the Corona pandemic in 2020? In principle, all these spaces can be explored through ethnographic studies. However, matters become more difficult when we ask further questions about the university as such, which turns out to be an unwieldy, complicated spatial formation: it is not easy to say where the space of the university begins and ends, how the boundaries between the inside and the outside are drawn, and when and where exactly the observing anthropologist is—or is not yet—"in the field." In other words, we do not yet know what an ethnography of the university would look like. This brings us back to the starting point: If the university is a space of research, how can we grasp it conceptually and how can we access it empirically?

Three dimensions of the university as a space

In order to understand the university as a tangible place, we need an elaborated concept of space. There are numerous debates on this issue in the social sciences and humanities, resulting in diverse proclamations of a "spatial turn" (Warf and Arias 2009). In light of these debates, I suggest a simple heuristic that differentiates three substantially different understandings of space:

(1) Sociology, and ultimately most social science research on higher education, focuses on the *socio-structural dimension* of the university space. This dimension refers to social structures and power relations, to organizational logics, to life courses, career paths and mobility patterns, to the relation of actors in social fields and to the co-constitution of such fields with forms of academic habitus. This spatial dimension has been elaborated most extensively by Pierre Bourdieu (1989), who coined the term "social space" in a specific way. At first glance, much of this spatial dimension is empirically ascertainable and measurable; the possibilities of data collection are almost limitless and many aspects can be quantified, compared and correlated—be it student numbers, supervision ratios, publication performance and bibliometric data, diversity statistics, proportions of international students and researchers, square meters, budget figures, success in national and international competitions and excellence initiatives, and much more. It is well known that some of this data has been systematically summarized in global rankings for a number of years (see also ❇ Competition between HEIs).

(2) Based on the traditional sociological distinction between structure and semantics, a *semantic-symbolic dimension* can be juxtaposed with the socio-structural dimension of the university space.

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This second dimension refers to symbolic orders, to historically evolved self-descriptions that flag themselves as "the idea of the university," to explicit mission statements and visions as well as to implicit values and norms. Research in this area has examined, for example, the visual identity of university icons, logos and emblems (Drori et al. 2016). From a methodological perspective, the analysis of this dimension is a challenge: it can hardly be researched using quantitative methods, and comparative research designs are difficult as well. Qualitative-hermeneutic approaches are required more broadly, in particular discourse and semantic analyses (Schauz and Kaldewey 2023).

(3) Third, the reference to the university as a space can be taken literally, so to speak. In this case, we can refer to the *material-physical dimension* of university space. This third dimension refers to architecture, spatial plans, campus design, technical infrastructures, the embedding of the university in an urban or regional context, and ultimately also geographical factors. While this dimension was hardly addressed in traditional sociology and higher education research for a long time (for an exception, see Temple 2014), recent trends in cultural studies—such as the "spatial turn" and the "material turn"—point to an increasing plurality of approaches that may help to explore this third dimension. Some sociological subdisciplines, in particular the sociology of technology and the sociology of architecture, also offer fruitful methodologies. Thomas Gieryn (2002, 41), for example, has suggested conceiving buildings as "'walk-through' machines." If one takes such approaches further, it makes sense to understand universities—or university campuses—as complex technical-material artifacts, as machines that do not function independently of the actors operating them, but which at the same time intervene in a structuring way in everything that these actors do. Buildings are then both the consequence and structural cause of social practices.

Research atmospheres

It is obvious that the material-physical dimension of university space cannot be adequately captured using mainstream social-scientific methods. In a first step, it seems reasonable to rely on ethnographic observations analogous to laboratory studies; ideally, an ethnography of the university would then capture all three dimensions of the university space. However, at the latest when presenting the research results, one would be confronted with the question of whether and how the material-physical dimension can be integrated into the form of a written report. Alternative methodological procedures and alternative theoretical approaches are therefore required as well. Visual methodologies (visual ethnography, visual sociology, and, in a broader sense, visual studies) are promising candidates in this context. Looking at the university with such a new set of tools may enhance our understanding of the university as a place and space that goes beyond the socio-structural and semantic-symbolic dimensions. In other words, it may be helpful to collect, produce and analyze visual material like photographs.

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Such alternative "views" of the university illustrate that it is not just a neutral place. Rather, it enables (or constrains) *research atmospheres*, understood here as the specific spatial and affective conditions that are conducive to the practice of research. Therefore, I suggest borrowing the concept of atmospheres from phenomenological philosophy and aesthetics (Riedel 2019) and using it to better understand the third dimension of the university space. According to Gernot Böhme, atmospheres are "tuned spaces," they "modify our state of mind" when we experience their character (Böhme 2006, 16; translated by the author). Put differently, and drawing on Hermann Schmitz, Böhme describes atmospheres as "spatially spilled out, quasi-objective feelings" (Böhme 2006, 16; translated by the author). They mediate between the objective qualities of an environment and subjective, physical sensations. In short, the concept of atmospheres is a possible starting point to understanding what makes the university a place and space where research flourishes—or does not.

Based on these considerations, future ethnographies of the university could investigate whether and in what way university members (students, academic staff, professors etc.) are embedded in research atmospheres—while they at the same time enact these atmospheres with their research activities. Of course, empirical observations may point to very different atmospheres, indicating that the university is not only a space of research, but also a place of education, activism, fun, business, and sometimes dirty politics. The empirical reconstruction of specific research atmospheres would open up new horizons for comparison: On the one hand, it would be necessary to investigate whether research atmospheres are something that connects universities as places of research, that is, a kind of principle that transcends the individual space—similar to the way in which the semantic dimension of space repeatedly gives rise to a universalistic "idea of the university" that transcends the local organization (Frank and Meyer 2020). On the other hand, it is also conceivable that research atmospheres cannot be standardized; on the contrary, if they are successful, they make a place unique. One could then assume an "intrinsic logic" in the way that spatial sociologist Martina Löw (2008) speaks of the "intrinsic logic of cities." This notion refers to structures "that influence the actions of individuals and groups as a relational context of meaning" (Löw 2008, 66, translated by the author). As a result, a city becomes "one's own" and is experienced as different to other cities (Löw 2008, 80). Similarly, we may ask whether some universities possess such an intrinsic logic, making them tangible places, individual and fundamentally different from each other. Not least, we may then ask whether the different research atmospheres passed on in different university spaces impact the kind of research that is conducted and conductible.

Conclusion

For those who study, teach, or conduct research, the university is not just an institutional setting but a lived environment that shapes everyday academic practice. Places and spaces do not merely host research—they enable, channel, or inhibit it. This makes the

question of this handbook article practically consequential: how universities are built, organized, and inhabited affects how knowledge is produced. A plausible hypothesis is that research thrives where socio-structural, semantic-symbolic, and material-physical dimensions align—and falters where they diverge. Understanding and shaping these constellations is therefore not only of interest to Science Studies, but of practical relevance for diverse groups practitioners, from science communicators to campus planners and higher education managers.

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Further reading

Further reading is a section where each author makes recommendations for interesting publications that widen the scope of the respective topic or are particularly valuable for deeper research.

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