Introduction: Discovery in action

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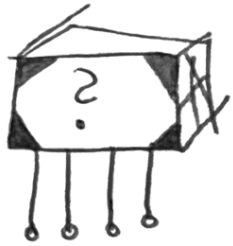

The doodle drawn in the call log by a Stasi officer in charge of the Stasi telephone hotline. Source: BArch MfS HA XXII 727. S. 213.

In the focus of this special issue of *Ethnographic Studies* is the practice of discovery. Vol. 12 (2011) of *Ethnographic Studies* has already extensively dealt with the topic of discovery in sciences, but we have decided to take a different perspective and significantly broaden the scope of the phenomena which can be placed under the rubric of "discovery." This inevitably presupposes the abandoning of science-centric approaches to "discovery." The term itself is so strongly associated today with the sciences (primarily, the natural sciences), that it is difficult to see that *discovering* is something that is regularly done in other professional and mundane circumstances. Another downside of such domination of science-framed view of discovery is that scientific practices of discovery (diverse as they are) are often used as a paradigm when analysing other practices and other contexts. One of the goals of this special issues is to break away from analytical custom and to introduce other descriptive and conceptual resources that can be applied to the topic.

At the same time, we do not think that avoiding science-centeredness in the discussion of discovery practices necessarily leads to the focus on the ways this term is used in everyday world. Analysis of everyday usage of the term could be helpful in finding out interesting phenomena for analysis, but its everyday use covers only a limited number of situations, and in many cases, we can find people doing discovery work without describing it this way. Of

course, this significantly increases the risk of analysts' imposing their own categories upon practitioners, but we think that this risk is worth taking, assuming that we, as analysts, do not come up with any particular *notions* of discovery that can reorganize the practical circumstances, reasoning, and perception under investigation.

This special issue is an outgrowth of the workshop "'Discovery Work' of Practical Action in Different Institutional Settings," organised by one of the editors of this issue, Olga Galanova, and Estrid Sørensen, the head of the Ruhr University Science & Technology Studies Laboratory (RUSTlab), at the Ruhr University Bochum on May 10–11, 2023 with the support of the German Research Foundation. Estrid Sørensen was very supportive of the whole event and acted as moderator and discussant at the workshop. The three papers presented at the workshop by Michael Lynch, Eric Livingston, and Olga Galanova were complemented by short commentary talks by Jörg Potthast and Philippe Sormani and by contributions from invited discussants Jörg Bergmann and Andrei Korbut.

As one can see, most of the papers in this special issue were first presented at the workshop, but we also invited some colleagues who had not participated because we wanted to bring together studies of real discovery practices from as many diverse areas as possible. When inviting participants to the workshop and to the special issue, we did not have in mind any definition of "discovery" where all of them could start from. The general framework was quite intuitive and based on a rather loose view of discovery, but one that can interest our colleagues in talking about discoveries and initiate new lines of research or revisiting existing ones. This means that what we have got *after* collecting papers for the workshop and the special issue was very much different from what we started with. Now, we can present a more coherent vision of discovery as a practical activity; still, without having, and actively trying to avoid, any concrete definition of what "discovery" is. So, let us first, before discussing the papers themselves, introduce the barebones praxeological scheme of the analysis of discovery that took shape when we put the papers from the present issue on the table.

First, discovery should not be mistaken as *learning*. Both discovering and learning presume that something previously unknown becomes known. But, unlike learning, discovering is based on finding out something *unprecedented*, not known not only to the individual discoverer, but to the community of discoverers. This unprecedentedness can be strong (as in many branches of science), or weak (as in leisure activities)—the difference being that in the first case, what is discovered can be claimed to be of a non-knowledge for *anyone*, while in the second case, we deal with the findings which are meaningful only for some local community of practitioners. There are already available systems of knowledge and skills that allow us not only to make discoveries, but also to evaluate whether something similar has been achieved before.

Second, every discovery presupposes that there can be a *failure*, or the wasting of time. The goal of the search can be missed, and something will be *not discovered* and remain "covered." To be sure, this is not something unique to the discovery practices. This failure can happen in many forms of human action. But in the case of discovery practices, the stakes

may be higher than in other forms of activities, and the consequences of not-discovering may be more dire.

Third, discovery practices are *object-oriented*. There is always *something* that is searched for and finally discovered. Although discoveries may be accidental, even in this case, they are still directed to the particular object which is used to organize and evaluate the process of finding it. The objects of discovery have very a peculiar property: they are elusive and they escape the discoverer's actions; they hide. If they are humans or animals, they may be hiding literally. But all types of discovered objects have this stubbornness that makes the discovery so difficult and, at the same time, so exiting.

Fourth, discovery is a *material* practice, not only in the sense of an activity that is being done by living human beings with their bodies among other material things, but also in the sense of it being *documented*, recorded in some form. The documentation may be institutionalized, but this is not always necessary. The progress of discovery is always accompanied by a particular form of record that make the discovery available for inspection, revision, evaluation, portrayal, etc.

And fifth, we can say that the discoverer has a special type of *eagerness*, encompassing *zeal* that drives them to undertake the activity of discovering. The flipside of this zeal is the *uneasiness* that many discoverers feel concerning their objects, because they know that the zeal is expected from them but the object of discovery is elusive. The reason for this feeling is that the social order, of which the discovery work is a part of, is also a *moral* order, where discoverers deal with certain obligations, evaluations, claims, and duties related to the moral status of their discoveries.

To be clear, these five elements of discovery are not its *characteristics*; they are observable features of some or all of the cases presented in the special issue. For all intents and purposes, it is better to view them as *methodological guidelines* for finding and analysing discovery practices; and we do not claim that the list is exhaustive as we are clearly aware of its *ad-hoc* nature. But it is useful as an *on-the-go composed thinking device* that can be used to stop and reconnoitre what we have achieved and what can be done next.

The introduced analytical framework derives directly from the studies in the special issue and reflects their comparability. What does it tell us about the studies?

First of all, we can start from the general observation that this framework is equally applicable both to discovery practices in the sciences and in other practical domains of expertise. As Michael Lynch shows in his paper, if we use discovery as an achievement verb, as is done in the sciences, we might miss the local work of *discovering*—the practice of doing something with the discovery as a pending possibility in this practice. This possibility should be validated later by the particular community, but as the actions unfold, the discovery represents just a thing that practitioners orientate towards. This praxeological approach opens a door to the consideration of other practices of discovery as practical doings, however different in their achievements.

From this initial step, we can start to develop the details of the discovery practices in various domains of activities.

As for the unprecedentedness of discovery practices, it shows us that the strong scientific requirement of producing new knowledge and discovering something that nobody (as certified by the scientific community) had discovered before is mitigated in other discovery practices. Stasi operatives (as described by Olga Galanova) do not always discover new forms of treason, for example, and often arrest people that commit the "usual" deeds considered "criminal" by Stasi. But at the same time, they often dealt with persons, who were not known as "traitors" previously. Stasi agents may not discover new forms of "treason," but they strive to discover new "traitors." In the case of mathematics lessons in school (studies by Tanya Tiagunova) or playing a geographical computer game (studied by Andrei Korbut), the expectation of unprecedentedness is even weaker. School children and game players aim to achieve something that many others have achieved already before them. And although we can say that the details of their practices are specific to the situated organization of their activity, they, in a sense, *repeat* the discovery and they are aware of this. However, the practical structures of discovery in these two cases still presuppose that the discoverers should find out something unknown to them, and this discovery should be validated by the teacher or by the developers of the computer game. Here, the difference between discovering and learning is very small or even absent but it can be evoked and used again at any time.

The papers in this special issue also show the different ways in which failure to make a discovery is consequential in the corresponding domains of praxis. The dictum "publish or perish," too well-known to everyone in academia, shows how harsh the consequence of not producing new knowledge can be. Managerial organizations of contemporary sciences raise the stakes in academic game even higher, every year forcing scholars to increasingly focus on publishing new results. For Stasi agents and for school students, the imperative of making discoveries is also very pressing. For them, it is not only a matter of institutional assessment of their activity, but also a part of being a "good agent" or a "good student." But, while for school students, discovery is something they want and have to demonstrate to the teacher as an individual (and sometimes group) achievement, in Stasi officers, what they are dealing with is something they consider dangerous not to themselves, but to the national interests of GDR. The consequence of the failure to discover a "traitor" is very different from the failure to find a solution for a mathematical riddle. Such a pressure of *not-discovering* is something unfamiliar for the players of computer games, where you have infinite opportunities to try again and where, as a result of non-discovery, you will only not gain a number of points. Here, wasting one's time may bring fun by itself, as the process of making discoveries while playing games often contains "subdiscoveries" that can be satisfactory in their own.

The differences between the studies collected in this special issue is even more significant when we consider the particular objects of discoveries made by practitioners. Stasi agents deal with people who not only know about the existence of the Stasi, but can also use various methods of remaining "invisible" to the agents. They may literally hide, and therefore one of the tasks of Stasi agents is to conceal their own surveillance activities from the objects of their investigations. In scientific laboratories, objects evade the attempts to dis-cover them in a different way: scientific objects should reveal themselves in the sequences of situated ac-

tions which are open through and through. The contact between the discovery machinery and the object in the sciences is a public event, even if sometimes scientists try temporarily to keep it behind the closed doors of the laboratory. Mathematical proof and finding out where you are in the computer game can be elusive too, but their elusiveness is of different sort: their object is something to be *achieved*, and not to be "disclosed."

But the most obvious and remarkable source of differences and similarities between the studies collected in this special issue is the procedures used to document discoveries in the corresponding cases. In the cases of scientific practices and secret service operations, there are even bureaucracies of discovery, with very strict ways of recording the steps and the results of actions undertaken. Scientists have to turn these documents into texts and images which can be used by fellow scientists to validate their discovery, while Stasi agents want to turn them into case materials presented in court, but both need to follow the protocols and regulations that make their discovery practices accountable as scientific and secret police achievements correspondingly. In schools, students use the provided material medium (sheets of paper with printed assignments) both as tools for making discoveries and as tracing devices which document their results. But here, in contrast to the sciences and the Stasi, the process of discovering itself is documented in lesser detail, as it is relevant only in the current situation and can be addressed in other ways, for example, via talking to the children. In computer games, this gap between the actual practice of discovering and its documentation is the widest, as the player only sees the final number of points they get for the discovery, but it says nothing about how it was achieved. Servers that run the game have logs of all actions made by the player, but these documents are not available to the players and have no relevance for their practice. On the other hand, some playing sessions are recorded and publicly shared by the players, not only for entertainment purposes and as proof of their superiority in gameplay skills, but also as documents that can be used by other players to improve their own skills. However, such documentation is not the integral part of the same discovery practices which it documents.

Finally, in all cases collected in this special issue, discoverers do not occupy the same position in their practices. Their zeal is different. Playing computer games is a lot of fun because the game is designed to entertain. Other described practices can also make discoverers do discovery work for the sake of having fun, but they also have institutional goals and forms of recognition that go beyond the actors' entertainment. And this institutional environment is important for how discoverers view their objects and the process of discovery. In the sciences, for example, actors may face the covert and occasionally overt expectation that they would spend more time on doing science—that is, on doing discoveries—than is inscribed in their work contacts. Science is a vocation, not just a profession. Similarly, Stasi officers are expected to demonstrate their can-do spirit, but there are also many positions in the institutional hierarchy of Stasi which involve doing very routine tasks without feeling particularly eager about it. But for the Stasi, there is also the constant presence of a specific framework that inspires discoverers: they are constantly reminded that they serve the interest of the state which may collapse without their service—something that is non-existent in primary

schools, where students solve mathematical tasks not for the greater good, but for their own good (or at least this is what they are told by the teachers and parents). Here the zeal to discover is welcomed but does not indicate that the discoverer shares some "mission" that the institutional environment of the discovery is founded on.

As should be obvious from the presented analytical framework and the ways it can be used to establish connections between the articles in this special issue, we tried to maintain the *praxeological* attitude toward the domains that can be put into the category of "discovery." This means that what is important is not their *commonalities*, but the *resonances* between their unique characters as forms of activity in the world. The framework is specifically constructed not to *lose* the practices as they are. If they can be brought together at all, this can be done only on their own terms. And we also have made the framework an open device, one that can be used for searching and including new domains of praxis that did not find its way into the special issue. For example, discovery work can be found in football coaching. As Charles Corsby argues, "The coaches' position from the edge of the practice is partial but motivated by discovering performances that will influence the course of the play (i.e. to influence the outcomes)" (2024, 47). Here, discovery can be seen as a broad (perhaps too broad) descriptor of the practice, but it can be used as a starting point to make comparisons with other practices to see how such comparisons can add to our understanding of these practices. Another example is methods used by Icelandic deep-sea fishermen to discover properties of their object: the fish (Thorlindsson 1994). For instance, they experiment with different types of bait to find out the best way to catch the cod (ibid., 336). Yet another example is the role of discovery in journalism. Zvi Reich (2006) distinguishes between news discovery and news gathering as two phases in journalistic work. But discovery can also be understood as a leading activity for certain types of journalism, such as investigative journalism (Ettema and Glasser 1998) or fact checking (Graves 2017).

This short overview of discovery practices in the domains of activity, not included in this special issue, shows us that we can start searching for new discovery practices without any definition of "discovery." "Discovery" may remain just a useful shibboleth for various activities in which actors undertake to find out something previously unknown. The processes and results of these searches are diverse enough to give up any idea of compiling an overarching set of features that any discovery should demonstrate. But we believe that bringing together heterogeneous practices and considering them side by side under the auspices of "discovery" can advance our understanding of those practices in ways which are not possible if we consider them individually. Now, readers will have a chance to judge by themselves how justified this belief is.

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