

– Call for Abstracts –

Forms and consequences of failure in science

Workshop on 19-21 July 2023, Berlin

Organized by Jochen Gläser, Michael Borggräfe, Tobias Lehmann
(Technical University of Berlin)

This workshop is motivated by the observation of a disparity between a general appreciation of failure in science and its limited investigation by science studies. We invite researchers from all fields of science studies to discuss forms and consequences of failure in science, which we preliminarily define as a situation in which neither the aimed-for solution to a research problem nor any other relevant contribution to the scientific community's knowledge could be produced. We are particularly interested in the following questions. How do researchers, research groups and scientific communities construct failure? How do they cope with situations of failure and their consequences?

Failure in science has been recognized for both its ubiquity and its epistemological merits. In the philosophy of science, Popper (1992 [1935]) argued that scientific progress depends not on the verification of proposed hypotheses, but rather on their falsification – an argument that resonates in scientific communities (Mulkay & Gilbert 1981; Sovacool 2005), whose members emphasise the importance of failure, criticise the neglect of negative findings and argue that the publication of negative results and results contradicting other researchers' findings merits special attention by editors and authors (e.g. Pfeffer & Olsen 2002; Loscalzo 2014). At the same time, such arguments have gained currency not least due to the observation that in their everyday knowledge production and publication activities, scientific communities tend to ignore and even suppress reports on failure, e.g. in the form of a "publication bias" against negative results (Sterling 1959; Fanelli 2012).

Given this odd triangle of empirical ubiquity, epistemological admiration and practical neglect, it is surprising that scientific failure has found little systematic attention by science studies. Laboratory ethnographers observed failure in everyday laboratory work but did not contextualise it as such (Knorr-Cetina 1981; Lynch 1985; Latour & Woolgar 1986 [1979]). The attempt by Star and Gerson (1987) to include some forms of everyday failure in a generalised account of "anomalies" that need to be "managed" by scientists was not developed further. Some cases of failure were investigated in detailed case studies by the history and sociology of science. These include the 'discovery' of N-rays and the dismissal of this discovery by the scientific community (Nye, 1980), the fate of Pflüger's theory of diabetes (Schlich 1993), Weber's claim to have detected gravitational waves, which was not accepted by the scientific community (Collins 1981, 1999), and the 'discovery' of cold fusion, which attracted researchers and sponsors for a long time after it was dismissed by the scientific community (Simon 1999). None of these single-case studies offered a systematic account of their case as an instance of failure, i.e. as a member of a specific class of phenomena.

We would suggest that by not studying failure in its own right, science studies miss an opportunity to advance our understanding of knowledge production in scientific communities. Failure disrupts individual and collective production processes and thus has the potential to expose taken-for-granted assumptions about how they work. Furthermore, scientific failure is increasingly relevant to the continuation of academic careers. Failure limits opportunities to publish and thus to gain visibility and reputation. This is likely to induce risk avoidance in the selection of problems and approaches to solving them, which in turn may slow down the progress of knowledge production. Studying career implications of failure can therefore lead to a better understanding of the processes by which the production and communication of contributions are linked to the development of researchers' reputation and to the translation of this reputation into career advancement.

To advance studies of scientific failure, we invite contributions from all fields of science studies to our workshop. A non-exclusive list of issues includes the following questions:

- How do researchers navigate epistemic uncertainties in their everyday research?
- How do researchers, research groups and scientific communities construct their own or others' failure?
- What are the consequences of failure for the research of individuals, groups, and scientific communities?
- How do evaluation systems impact the way in which individual researchers and scientific communities handle scientific failure and its consequences?

Important dates

- Submission of abstract (500-750 words): 31 January 2023 by email to borggraefe@tu-berlin.de
- Decision on acceptance: 10 February 2023
- Submission of paper (min. 4000 words): 5 July 2023
- Workshop: 19-21 July 2023

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