Scientific activity and its norms, at the crossroad of internal and external factors

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Résumé

Demarcation issues about science were long seen as a matter of telling scientific from non-scientific statements. Several philosophical and scientific developments have made this framework inoperative, if not inadequate. First, philosophers of the empirical and formal sciences have emphasised that the notion of practice and attention to the making of science (vs. a focus on statements and results) were crucial to understanding most questions about science (Kitcher, 1993). Second, external ingredients have been shown to play a crucial role in science, both within applied and non-applied science. Typically, values are parts and parcels of scientific decisions (Douglas, 2023), and non-scientific actors such as policy-makers and citizens (in participatory science) can play a non-peripheral role in scientific inquiries (Elliott & Rosenberg, 2019). Finally, discussions about acceptable and good practices and golden rules of research and, more generally, about research integrity illustrate the relevance of the question of what a good action is in science, both for practitioners and for regulatory purposes (Fanelli, 2011).

In this context, this symposium aims to investigate how the presence of both internal and external ingredients is compatible with the idea of scientific normativity and how these ingredients should be taken into account within scientific norms. We believe that successful answers to these questions require integrating the philosophical lore of analytic philosophy of action (typically concerning conceptual problems related to the analysis of good action), integrating the diversity of scientific practices and ways of making science, and finding how to go beyond categorical distinctions to accommodate the various shades of grey between good practices and deviant behavior.

Scientific norms for good practices: rule or act consequentialism?
Scientific practices should comply with general research standards and norms, typically those described in research integrity charts, and be as reliable as possible. Because the primary goal of science is to give access to valuable epistemic outputs, epistemic consequentialism seems the right framework to justify the value of rules and cash out what reliability amounts

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to. This is a source of tension since the consequentialist value of rules is contextual and subject to the typing problem (depending on whether rules are described under more or less broad types, their epistemic evaluation may vary). I propose the following solution, inspired by the rule/act consequentialism debate (Hooker, 2023). By default, we have a prima facie epistemic duty to comply with general epistemic rules, which are globally shared because of their global consequences (rule-consequentialist evaluation); however, we can override this duty if we show that adopting other practices leads to better epistemic outputs, where epistemic assessment focuses on the effects of more particular rules or token-practices (act-consequentialist evaluation).

Malpractice and deviant behavior in science: a question of scientific communication?
In 'Philosophy of Scientific Malpractice' (2021) - the study of practices that are detrimental rather than conducive to scientific knowledge - Andersen presents a new area of research and argues for a greater focus on 'gray-zone behaviors'. From this perspective, it may be helpful both to distinguish between different demarcation issues and to provide a general framework for explaining and understanding how dubious or deviant practices arise. I focus here on role responsibilities (Douglas, 2009), actions at various stages of the research process, and roles of values in scientific decisions. However, the internalisation of beliefs and the issues related to the transparency of values, intentions or moral responsibility make studying illegitimate influences of values in science difficult, if not impossible. I aim to show how a philosophy of malpractice, informed by a philosophy of science in practice that acknowledges the communicative dimension of scientific activity, could help to address these challenges.

What is a scientific question? Revisiting Hempel's 'Science and Human Values' (1960)
How should we educate our children to make them happy? This is the example that Hempel, in his 1960 article 'Science and Human Values', uses to explore the question of whether and to what extent science can guide us in our life and societal choices. Beyond the boundary drawn by logical empiricism between what falls under the empirical - thus free of moral values - and what pertains to morality - therefore not subject to empirical study - Hempel's analysis allows for finer distinctions. These distinctions help clarify the extent and limitations of how science can inform our decisions. Thus, by revisiting Hempel, we propose distinguishing between empirical questions (which can, in principle, receive an empirical answer), scientific questions (which can, in practice, be answered using existing scientific methods), and scientifically relevant questions (which are meaningful to actual scientific research). This approach enables us to show that questions that may appear scientific - and that citizens and politicians as decision-makers may expect science to answer - do in fact carry some inherent value judgements.

Participatory science and research between knowledge and action
Faced with the collective challenges of ecological and solidarity-based transitions, it also appears essential to reconfigure the respective roles of academic researchers and 'civil society' in pursuing solutions to the environmental, social, and climatic issues we face. I examine the polysemous concept of 'participatory science and research', which aims to encompass the range of mechanisms emerging to give substance to this new social contract for science. This notion supports the fragile yet tangible institutionalisation of 'participatory' practices in science (notably through the establishment of specific funding instruments) and represents a form of institutionalisation that imposes a normative vision of what collaboration between researchers and non-researchers is and should be. The presentation offers a critical analysis of the concepts that underpin the current development of participatory science and research, particularly those of 'participation' and 'co-construction of knowledge'. I contend that the (over)use of these terms constructs a biased perspective on what participatory science and research genuinely entail. I then propose other criteria to describe and classify participatory research practice, based on their relations to (individual, collective, public) action. I distinguish three kinds of participatory practice and decipher in each case the norms and values which underpin scientific activities within these extra-academic collaborations.

Mots-Clés: actions, norms, values, practices, integrity