

Stephan Guttinger

University of Exeter

What are questionable research practices?

The idea of “questionable research practices” (QRPs) is central to the narrative of a replication crisis in the experimental sciences. According to this narrative the low replicability of scientific findings is not simply due to fraud or incompetence, but in large part to the widespread use of QRPs, such as “p-hacking” or the lack of adequate experimental controls. The claim is that such flawed practices generate flawed output. The reduction – or even elimination – of QRPs is therefore one of the main strategies proposed by policymakers and scientists to tackle the replication crisis.

What counts as a QRP, however, is not clear. As I will discuss in the first part of this paper, there is no consensus on how to define the term, and ascriptions of the qualifier “questionable” often vary across disciplines, time, and even within single laboratories. This lack of clarity matters as it creates the risk of introducing methodological constraints that might create more harm than good. Practices labelled as ‘QRPs’ can be both beneficial and problematic for research practice and targeting them without a sound understanding of their dynamic and context-dependent nature risks creating unnecessary casualties in the fight for a more reliable scientific practice.

To start developing a more situated and dynamic picture of QRPs I will then turn my attention to a specific example of a dynamic QRP in the experimental life sciences, namely, the so-called “Far Western Blot” (FWB). The FWB is an experimental system that can be used to study protein-protein interactions but which for most of its existence has not seen a wide uptake in the community because it was seen as a QRP. This was mainly due to its (alleged) propensity to generate high levels of false positives and negatives. Interestingly, however, it seems that over the last few years the FWB slowly moved into the space of acceptable research practices. Analysing this shift and the reasons underlying it, I will argue a) that suppressing this practice deprived the research community of a powerful experimental tool and b) that the original judgment of the FWB was based on a simplistic and non-empirical assessment of its error-generating potential. Ultimately, it seems like the key QRP at work in the FWB case was the way in which the label “questionable” was assigned in the first place. I will argue that findings from this case can be extended to other QRPs in the experimental life sciences and that they point to a larger issue with how researchers judge the error-potential of new research practices.