ERROR Author Response Letter

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Background

In April 2024, Phil Fernbach contacted me about an email he received from Dr. Malte Elson, who described the ERROR project and invited our participation in a review of our 2019 paper published in Nature Human Behaviour: Fernbach, P. M., Light, N., Scott, S. E., Inbar, Y., & Rozin, P. (2019), "Extreme opponents of genetically modified foods know the least but think they know the most," *Nature Human Behaviour*, 3(3), 251-256. Phil asked if I would be interested in taking the lead on this process, as I was the coauthor team's keeper of materials, data, and code, with support from Sydney Scott.

Initially, I was somewhat reluctant to participate. I had visions of potential career-damaging errors being discovered, partly because I was a relatively junior PhD student at the University of Colorado when Phil and I started this project. Additionally, we had learned relatively late in the project's development that Sydney Scott, Yoel Inbar, and Paul Rozin were working on a very similar project with complementary results. The two separate coauthor teams ultimately combined, resulting in the five-person manuscript published in Nature Human Behaviour.

Without too much deliberation I decided to get over my reluctance. As someone interested in the history and philosophy of science, I believe in scientific principles including the revision of existing paradigms, confronting uncertainty, triangulating effects, dialogue, and replication to achieve a better understanding of the world. Given these beliefs, I couldn't decline participation. After all, this paper focuses on individuals' attitudes on a technology about which there is a scientific consensus (arrived at via decades of scientific knowledge production, critique, and reevaluation). Any rookie mistakes I might have made *should* come to light. I directed Dr. Elson to our materials in a public OSF repository and agreed to participate. Dr. R. Chris Fraley (University of Illinois Urbana-Champaign) was selected as the reviewer, and I received his comprehensive review in July 2024.

Noted Errors

I was pleased to learn that Dr. Fraley found no errors related to the paper's conceptual design, measurement, model specification, data processing, pre-registration consistency, generalizability claims, or statistical reporting. The most notable errors identified, in my

opinion, were two typos in Study 1's reported coefficients, where decimal points were missing. Dr. Fraley also noted that some language describing correlational relationships comes dangerously close to implying causation. I take both issues seriously and commit to addressing them (and any other errors) in whatever manner the ERROR review team deems appropriate.

Overall Response

In my opinion, ERROR is a promising model for scientific quality assurance, and I appreciate the opportunity to participate. The idea of pairing rigorous post-publication reviews with incentives for both reviewers and authors is an interesting complement to traditional peer review processes.

I am especially hopeful about ERROR's treatment of error detection as an integral component of the research process that helps normalize critical examination of published work. This approach aligns with fundamental scientific principles of falsifiability and iterative refinement. Scientific findings warrant careful scrutiny, and ERROR demonstrates that thorough post-publication review can be implemented in a way that both identifies meaningful errors and maintains collegial scientific discourse. One of the things I love about academia is a culture that values both precision and constructive criticism (most of the time).

It was interesting to see which aspects of this particular paper were singled out for evaluation and scrutiny. There is a certain meta quality to this process, given the paper's focus on anti-science attitudes toward a technology about which there is a scientific consensus. In retrospect, I am proud of the paper we produced, and I hope readers update their priors about its findings (both "correct" and "erroneous") in light of Dr. Fraley's review and subsequent findings from other researchers. I would like to extend a special thanks to Dr. Fraley, Dr. Elson, and Dr. Cummins for their time, professionalism, and commitment to this pioneering endeavor.

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