Were those experiment results really so predictable? These researchers aim to find out

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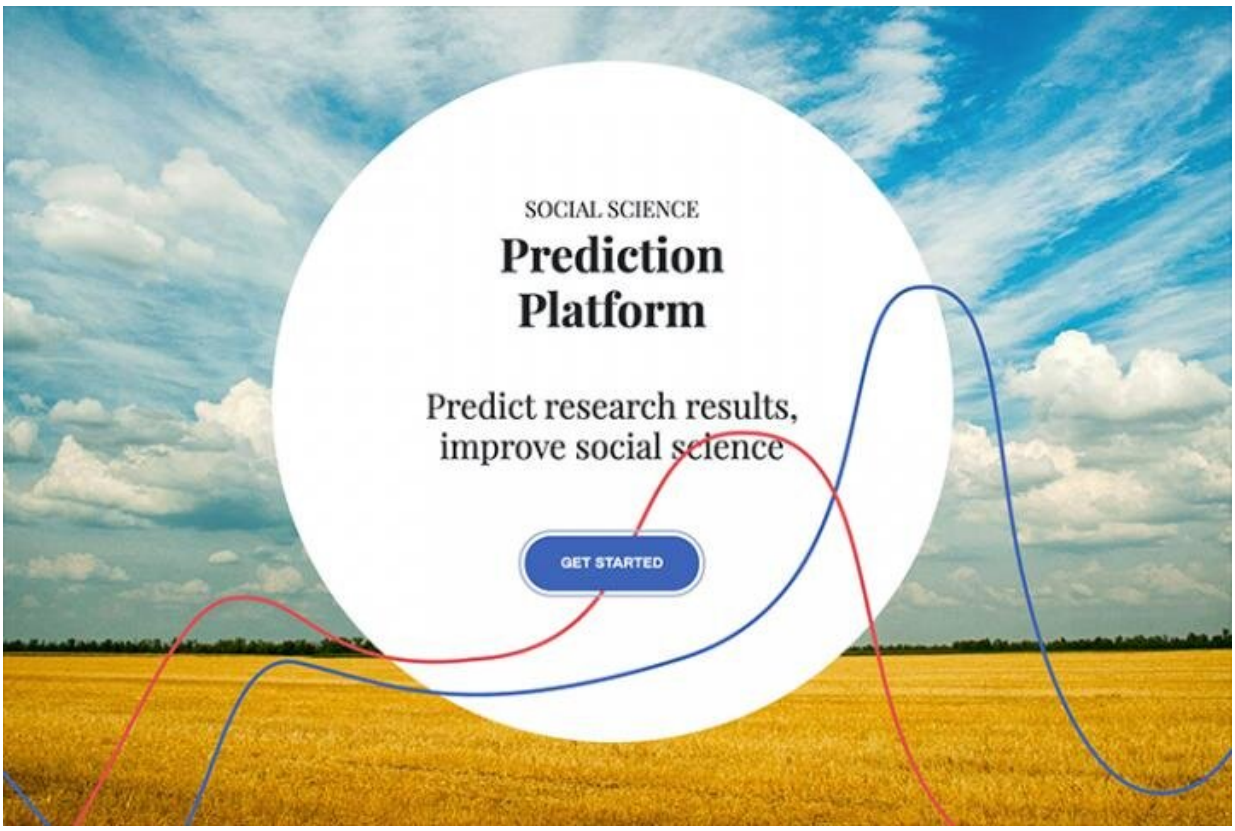

Researchers have launched a beta website to collect predictions on research outcomes. Credit: socialscienceprediction.org

They say that hindsight is 20-20, and perhaps nowhere is that more true

than in academic research.

"We've all had the experience of standing up to present a novel set of findings, often building on years of work, and having someone in the audience blurt out 'But we knew this already!,'" says Prof. Stefano DellaVigna, a behavioral economist with joint appointments in the Department of Economics and Berkeley Haas. "But in most of these cases, someone would have said the same thing had we found the opposite result. We're all 20-20, after the fact."

DellaVigna has a cure for this type of academic Monday morning quarterbacking: a prediction platform to capture the conventional wisdom before studies are run.

Along with colleagues Devin Pope of the University of Chicago's Booth School of Business and Eva Vivalt of the Research School of Economics at Australian National University, he's launched a beta website that will allow researchers, Ph.D. students, and even members of the general public to review proposed research projects and make predictions on the outcome.

Their proposal, laid out in an article in *Science*'s Policy Forum, is part of a wave of efforts to improve the rigor and credibility of social science research. These reforms were sparked by the replication crisis—the failure of reproduce the results of many published studies—and include mass efforts to replicate studies as well as platforms for pre-registering research designs and hypotheses.

"We thought there was something important to be gained by having a record of what people believed before the results were known, and social scientists have never done that in a systematic way," says DellaVigna, who co-directs the Berkeley Initiative for Behavioral Economics and Finance. "This will not only help us better identify results that are truly

surprising, but will also help improve experimental design and the accuracy of forecasts."

Because science builds on itself, people interpret new results based on what they already know. An advantage of the prediction platform is that it would help better identify truly surprising results, even in cases where there's a null finding—which rarely get published because they typically aren't seen as significant, the researchers argue.

"The collection of advance forecasts of research results could combat this bias by making null results more interesting, as they may indicate a departure from accepted wisdom," Vivalt wrote in an article on the proposal in The Conversation.

A research prediction platform will also help gauge how accurate experts actually are in certain areas. For example, DellaVigna and Pope gathered predictions from academic experts on 18 different experiments to determine the effectiveness of "nudges" versus monetary incentives in motivating workers to do an online task. They found the experts were fairly accurate, but there was no difference between highly cited faculty and other faculty, and that Ph.D. students did the best.

Understanding where there is a general consensus can also help researchers design better research questions, to get at less-well-understood phenomena, the authors point out. Collecting a critical mass of predictions will also open up a new potential research area on whether people update their beliefs after new results are known.

Making a prediction on the platform would require a simple 5-to-15-minute survey, DellaVigna says. The forecasts would be distributed to the researcher after data are gathered, and the study results would be sent to the forecasters at the end of the study.

Berkeley Haas Prof. Don Moore, who has been a leader in advocating for more transparent, rigorous research methods and training the next generation of researchers, says the prediction platform "could bring powerful and constructive change to the way we think about research results. One of its great strengths is that it capitalizes on the wisdom of the crowd, potentially tapping the collective knowledge of a field to help establish a scientific consensus on which new research results can build."

More information: Stefano DellaVigna et al, Predict science to improve science, *Science* (2019). DOI: 10.1126/science.aaz1704

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