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The following is the Abstract of a study by Barbara Mellers, Eric Stone, Terry Murray, Angela Minster, Nick Rohrbaugh, Michael Bishop, Eva Chen, Joshua Baker, Yuan Hou, Michael Horowitz, Lyle Ungar, and Philip Tetlock. Department of Psychology, University of Pennsylvania, Haas School of Business, University of California, Berkeley, and Department of Statistics, Temple University, published in *Perspectives on Psychological Science*, May 2015, Volume 10, Nr. 3, 267-281. doi: 10.1177/1745691615577794 which was reprinted by permission of SAGE Publications in *Research Digest* in July 2015 with *Research Digest* Editor's Comment at the end of this Abstract.

Identifying and Cultivating Superforecasters as a Method of Improving Probabilistic Predictions.

Abstract:

Across a wide range of tasks, research has shown that people make poor probabilistic predictions of future events. Recently, the U. S. Intelligence Community sponsored a series of forecasting tournaments designed to explore the best strategies for generating accurate subjective probability estimates of geopolitical events. In this article we describe the winning strategy: culling off top performers each year and assigning them into elite teams of superforecasters. Defying expectations of regression toward the mean 2 years in a row, superforecasters maintained high accuracy across hundreds of questions and a wide array of topics. We find support for four mutually reinforcing explanations of superforecaster performance: (a) cognitive abilities and styles, (b) task-specific skills, (c) motivation and commitment, and (d) enriched environments. These findings suggest that superforecasters are partly discovered and partly created, and that the high-performance incentives of tournaments highlight aspects of human judgment that would not come to light in laboratory paradigms focused on typical performance.

RESEARCH DIGEST EDITOR'S COMMENT:

The authors of the above study, found “support for four mutually reinforcing explanations of *superforecaster* performance: (a) cognitive abilities and styles, (b) task-specific skills, (c) motivation and commitment, and (d) enriched environments” and that “Accurate probability estimates are critical for good decision making in fields as diverse as medical diagnosis, portfolio management, and intelligence analysis.” In tests with area under the curve (AUC), a measure of accuracy or discrimination ability from signal detection theory, the computed values of AUC were 96% for *superforecasters*, 84% for top-team individuals, and 75% for all others.

“*Superforecaster* superiority held up strongly on this metric as well. Indeed, in one analysis, the receiver operating characteristic (ROC) for *superforecasters* was as accurate 300-plus days into the future, when the ROC for regular forecasters was only 60 days out.” The study showed that fluid intelligence was the strongest dispositional predictor of accuracy. In fact, *superforecasters* scored higher than top-team individuals and all others on all measures of fluid intelligence, including the Raven’s Advanced Progressive Matrices, the Shipley-2 Abstraction Test, the Cognitive Reflection Test, an extended version of the Cognitive Reflection Test, and two Numeracy scales. The authors indicated that “*superforecasters* have distinctive dispositional profiles, scoring higher on several measures of fluid intelligence and crystallized intelligence, higher on the desire to be the best, the need for cognition, open-minded thinking, and endorsements of a scientific worldview with little tolerance for supernaturalism.”

The aforesaid *Superforecasters* performance would probably be regarded by many leaders in the discipline of forensic psychophysiology using the polygraph, whose results are probabilistic information (Nelson, Handler 2015), as “outliers” due to their unique and exceptional accuracy significantly above regular forecasters, without a thought about the four distinguishing features identified in aforementioned Mellers et al study that sets the *Superforecasters* apart from the regular forecasters. In an article published in *Polygraph* (Krapohl 2007), the author discusses “advocacy research” and cites the Arther technique (R. Arther) 99% accuracy, the Guilty Knowledge Test (D. Lykken) 96% - 100% accuracy, the Integrated Zone Comparison Technique (N. Gordon) 99.5% - 100% accuracy, and the Quadri-Track Zone Comparison Technique (J. A. Matte) 100% accuracy, as examples of advocacy research which “often tends to produce highly favorable results for the interests of the advocate.” Krapohl’s position indicates a bias potential which may be justified in those cases that are supported by compelling evidence. However, labeling a study and its involved performance as Advocacy Research and Outliers (Krapohl 2007; see also Gougler, Nelson, Handler, Krapohl, Shaw and Bierman 2011), is like passing sentence before trial, and implies incompetency, negligence or intellectual dishonesty on the part of its authors, which raises the old proverb that suspicion of others is aroused by what we know of ourselves. Without substantial and convincing evidence of research malpractice, the positive alternative that the aforementioned innovators are indeed Superforecasters should be adopted and their work be examined without prejudice, and accepted for the benefit of the entire profession. The above creators of their respective polygraph techniques are individuals who devoted the better part of their adult life in creating and perfecting their polygraph techniques to a high degree of accuracy not expected of their students who graduate with less than 100% recollection and understanding of the psychophysiological aspects of the technique. Nevertheless some of them become involved in research of the technique they learned while other researchers gain information about the technique in study from lectures and/or published articles and textbooks. In a lecture at an American Polygraph Association (APA) seminar a few years ago, the Backster Either-Or Rule was mentioned, and when the lecture ended, an APA member with some 30 years of experience as a government examiner schooled in the Backster You-Phase and its Federal derivative, asked

this author, a Backster graduate, to explain how the Either-Or Rule works, to the astonishment of this author, which according to Cleve Backster, forms the nucleus of the Backster Zone Comparison Technique. This is but one example of polygraph examiners who either failed to grasp all of the information provided them during their training, or the fault of the instructor who failed to provide that information through ignorance, negligence or design. In this author's four decades of conducting quality control reviews of other examiners' work, it became evident that a significant percentage of them had failed to understand the psychological aspects of the technique they were using, and forgotten important elements of the technique's protocol as evidenced by the numerous procedural violations.

The fact that the creators of the above cited techniques taught their systems on a continuing basis for several decades, reinforced retention of details regarding its structure and application. Hence there was no deviation to the format and procedure in the conduct of polygraph examinations used in their field research studies, thus providing an absolute and pure representation of the polygraph technique in action. The above cited technique creators/administrators, all recognized as court experts, would meet the qualities expressed in above Mellers et al study, to wit: (a) cognitive abilities and styles, (b) task-specific skills, (c) motivation and commitment, and (d) enriched environments, which would undoubtedly merit the title of *Superforecasters* of truth and deception. As stated by Mellers et al, Superforecasters have a higher desire to be the best, the need for cognition, open-minded thinking, and endorsements of a scientific worldview with little tolerance for supernaturalism. To label their work as "advocacy research" and its results as "outliers" without supporting evidence other than the fact that their research shows a higher degree of accuracy than other techniques, deprives the polygraph profession of its benefits and significantly curtails the advancement of the polygraph profession.

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