NOTE: Freelance writer Mark Harris appears to be focused on discrediting lie detection technology in general. He wrote another article for WIRED that was posted on October 1, 2018 that attempted to discredit polygraph: The Lie Generator: Inside the Black Mirror World of Polygraph Job Screenings

COMMENT: Before Dr. David Raskin’s association with Converus, he worked with Senators Hatch and Kennedy to write the Employee Polygraph Protection Act (EPPA) of 1988. That legislation is a clear indication that the Converus Science Team appreciates the problems associated with the use of polygraph for screening employees, and they have worked to protect the public from abuses legislatively and with the development of EyeDetect. EyeDetect is not perfect, but because it is automated, it eliminates many of the concerns expressed by the scientific community about using polygraphs for screening.

CLARIFICATION: These tests were conducted by Converus Service Partners, which are authorized resellers of Converus technologies. Converus has verification from its service partners that EyeDetect pre-employment screening tests were performed in 2016 by them at the request of the local subsidiaries. If WIRED Magazine contacted the U.S.-based corporate offices about Converus, those offices would likely be unaware because the business relationship is through the local Converus Service Partner in-country.

REBUTTAL: Unlike the polygraph, EyeDetect is completely automated. A computer administers and scores the results. Unlike the polygraph, the person who administers the test can have absolutely no influence on the outcome — in that sense, it is completely unbiased. That said, Converus uses the test data in combination with historical information to adjust the sensitivity of the scoring algorithms for different settings. We discuss this more in the context of other misstatements by Harris below.

REBUTTAL: According to a Google search, Vera Wilde is an American poet and painter with a 2014 Ph.D. in politics. Based on an online copy of her CV in 2017, she has had no training in psychophysiology, has never collected or analyzed any psychophysiological data, and has one peer-reviewed publication in what may be a legitimate scientific journal on a topic that appears to be completely unrelated to deception detection. She hardly can be considered an expert on the polygraph or any other psychophysiological method for credibility assessment.

In contrast, the second critic, William Iacono, is a psychophysiologist and has conducted research on the polygraph. But to our knowledge, he has no direct experience with the methods or measures used by EyeDetect. Iacono is an ardent advocate of a polygraph technique known as the Concealed Information Test and has a decades-long history of acrimonious debate about alternative polygraph techniques in the scientific literature and in court with members of the Converus science team. His opinion on the scientific basis and evidence in support of EyeDetect was predictable and hardly unbiased.

REBUTTAL: Harris didn’t fool the machine on the first go-round. He didn’t follow instructions for the Numbers Test. During the test, the instructions to Harris stated that he should write down a number from 2 to 9. Harris did not comply. The computer doesn’t even analyze the ocular-motor data for the number 1 and could not possibly detect deception on that question. But when Harris followed instructions, EyeDetect demonstrated it works by successfully identifying the number he chose.
We know that when we have accurate statistical analysis, we can identify the strengths and weaknesses of our experimental design. However, we also need to be aware of the limitations of our research. In this case, we need to consider the possibility that our findings may be statistically significant, but not because the test questions were not effective. Instead, it is possible that the test questions were simply too easy for the participants to pass. For example, if the test questions were too easy, we may have obtained a higher accuracy rate than we would have if the questions had been more difficult. For this reason, we cannot assume that our findings are statistically significant simply because the test questions were accurate.

The next step is to consider the implications of our findings. If we find that the test questions were too easy, we may need to re-evaluate our experimental design and consider ways to improve the effectiveness of the test. In addition, we may need to consider the potential for bias in our research. For example, if we find that the test questions were too easy, we may need to consider whether the participants were motivated to pass the test. If we find that the participants were not motivated to pass the test, we may need to consider whether this bias influenced our results.

In conclusion, we have found that the test questions were too easy for the participants to pass. This suggests that our findings may not be statistically significant, and we may need to re-evaluate our experimental design and consider ways to improve the effectiveness of the test. In addition, we may need to consider the potential for bias in our research.

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REBUTTAL: Contrary to Dr. Allen’s view that we’d need “a very good database on which to estimate base rates of guilt,” research indicates that even rough estimates of base rates improve decision accuracy, unless those estimates are extremely high or low. We do not use extreme base rate estimates; otherwise, the examinee’s test data would have little influence on the outcome. More importantly, we do not leave decisions concerning base rates up to the individual examiner, and the outcome cannot “effectively be altered at the operator’s discretion.”

REBUTTAL: We don’t know what Jay Stanley of the ACLU was told, but he is mistaken. Unlike the polygraph, EyeDetect is completely automated and does not depend on the expertise, knowledge, or biases of the operator. The test is administered and scored by a computer. Operators cannot alter the outcome because they have no way to modify any of the information used by the computer to reach a decision.

REBUTTAL: To determine if a person is credible, we begin with the base rate, which is called the prior probability of deception, and we adjust it upward or downward based on the data we get from the eye tracker. Our algorithm classifies the tested individual as credible or not credible based on the adjusted (or posterior) probability of deception. The approach we use generally is accepted as a best practice in a branch of applied mathematics known as statistical decision theory. The theory tells us that base rates are a valuable source of information, and if we are rational, we should formally incorporate base rate information in the decision process to maximize test accuracy. We are unaware of any approach that would improve on accuracy across settings with differing base rates of deception. If anyone knows of a better approach, we would be happy to hear about it.

REBUTTAL: Harris states that “critics can reinterpret and discuss polygraph test results out in the open, but Converus uses proprietary algorithms.” Harris implies that EyeDetect cannot be evaluated by the public and/or scientific community. In fact, publication in scientific journals ensures that the methods used to obtain the findings, such as subject selection, data-generation procedures, feature extraction, and methods of analysis are not only appropriate but also are described in sufficient detail to allow others the opportunity to reproduce, extend, or challenge the findings. We publish our findings in well-regarded scientific journals and provide no less information on this technology than countless other publications on polygraph techniques. We will continue to subject our research to rigorous peer-review because it is an opportunity to not only disseminate new knowledge about the technology but also learn from our peers and improve on the methods we developed.

CONCLUDING REMARKS: Dr. Allen’s comments were reasonable, and we would expect a knowledgeable, though critical, scientist to raise such points. We tried to address his concerns. What we did not expect was Harris’ selective and misleading review of the research on this technology. We have been conducting psychophysiological research on the deception detection for over 40 years. Over the past 14 years, our research has focused almost exclusively on this technology. Our findings support the use of EyeDetect technology for criminal investigations and pre-employment screening, particularly for people seeking jobs in public safety and national security. You would never know that from reading this WIRED article. Harris attempted to inform his readers of what he erroneously perceives as a new scam designed to cheat people out of their money — maybe even their lives or freedom. Unfortunately for his readers, Harris seemed more intent on simply waging a crusade against yet another credibility assessment technology (read his previous article on polygraph) than summarizing what we know about this new technology and letting the reader decide if it is good or bad. We don’t think that’s too much to expect.

REBUTTAL: EyeDetect is not perfect. No technology to detect deception is perfect or probably ever will be. If the test were perfect, what deceptive person would ever agree to take one? We expect that about 15% of deceptive people will beat the test. To seek out and highlight the occasional error makes for a compelling argument if the reader has a limited background in science, but the occasional error does not change the long-run average accuracy rates achieved by EyeDetect in multiple lab experiments and field studies, independently reviewed by knowledgeable scientists and published in peer-reviewed scientific journals and books. To suggest otherwise is disingenuous and a disservice to readers of WIRED magazine.