DOWNLOAD PDF VALUE CONTROVERSY

Chapter 1 : Controversy | Definition of Controversy by Merriam-Webster

Few statistical topics have spurred as much controversy as blog.quintoapp.com overview of the p-value controversies can start with Cohen's () classic article, "The Earth is Round (p <).

Just recently, the editors of the academic journal Basic and Applied Social Psychology have decided to ban p-values: This has created quite a fuss among anyone who relies on significance testing and p-values to do research especially those, presumably, in social psychology who were hoping to submit a paper to that journal any time soon. These letters all tell a similar story: But not everyone advocated throwing out the method in its entirety. I wanted to do a simulation study to illustrate this for my students. I tell you to go out and randomly sample students, asking them what their cumulative GPA is. You can also find the standard deviation of all the values in your sample of What matters is the totality of the evidence. This is sampling error, which can lead to incorrect inferences during significance testing. It would require a lot of time, or a lot of effort, to go out and collect a whole bunch of samples. To do this, I searched the web to see if I could find data that might help me get this distribution. I found some data from the University of Colorado Boulder that describes GPAs and their corresponding percentile ranks. Yes, I am eyeballing. It told me I needed at least Fortunately, R makes it easy for me to pretend I have all these students. They are all over the place! One of the distributions of observed GPAs for a student who would have rejected the null is shown below, and it looks just fine right? Even though the bulk of the P-Values are well over 0. Median Mean 3rd Qu. Not very likely at all, especially if collecting more data is costly in terms of money or effort. Hence the p-value controversy. Make sure your sample size is big enough. A power of 0. However, knowing what your effect size is prior to your research can be difficult if not impossible. Be aware of biases that can be introduced by not having a random enough or representative enough sample. Make it easy for others to replicate your study. I am certain that my argument has holes, but it seems to be a good example for students to better embrace the notion of sampling error and become scared of itâ€¦ or at least more mindful. Please feel free to suggest alternatives that could make this a more informative example. Related Share Tweet To leave a comment for the author, please follow the link and comment on their blog:

Chapter 2 : Seventh Amendment | Constitution | US Law | LII / Legal Information Institute

The Value of Controversy podcast on demand - Can you imagine a world where everyone knows they can make a difference? What if we can create a conscious world that offers different choices, where our futures are creative, generative and sustainable, and each of us is a contribution to greater.

Changes to the way courts apply the Seventh Amendment are not going to revive the institution. Civil jury trialâ€"and the process leading up to itâ€"is so long, expensive, and unpredictable that almost no parties want to use it. Parties would rather have a decision by a judge, or, more often, reach an agreement and settle the case. Civil jury trial has always had serious shortcomings. These have only become deeper with time, and reform cannot solve them. This is why the civil jury either has never existed or has virtually disappeared all over the world, including in the United States. It would be better to repeal the Seventh Amendment and to focus on improving investigation of facts and decision-making in civil cases. The Political Reason for the Civil Jury The joint statement explains that Americans at the time of declaring independence valued the civil jury mainly for a political reason. After the Revolution, that political reason became much weaker. Colonial and revolutionary Americans praised the civil jury for its ability to nullify, or refuse to follow, hated British lawsâ€"especially laws about taxes. While Americans were under British rule, juries were a way for Americans to govern themselves. After independence, the American people formed the federal and state republics and governed themselves through elected officials in legislatures and the executive. The representative function of the jury became less important. Jury nullification turned out to be deeply problematic in a self-governing republic. In the American republics, the people elected representatives to make and enforce the laws. Not only that, but the laws were made according to carefully designed mechanisms specified in constitutions, themselves ratified by the people or their representatives. Why should twelve persons have the right to nullify laws made in this manner? Once the revolutionary era was over, many Americans began to regard the civil jury not so much as a mini-legislature, but as a way of deciding cases. The political observer Alexis de Tocqueville wrote that the jury could be regarded either as a political institution or as a judicial institution. Alexis de Tocqueville, Democracy in America J. See Tocqueville, at The Intrinsic Shortcomings of the Jury and the Constant Need for an Alternative Judges have always understood that ordinary juries have difficulty understanding cases involving complicated facts and law. Juries must hear all evidence in a case at once and decide all issues at once, despite potential confusion, because it is not practical for jurors to keep coming back to court at different times. Furthermore, it is difficult to correct a jury verdict on appeal, because jurors give no official reasons for their decisions. The English common law developed various ways to try to cope with these shortcomings. Cases that went to a jury generally concerned only two parties, one claim for money damages, and one or at most a few simple questions of fact. A judge could comment on the evidence in a case, to help the jury understand. At common law, almost the only remedy for a jury making a mistake was to order a new trial. A new trial was time-consuming and expensive, because the case had to be tried all over again to a different jury, but at least it was some way to correct jury error. Read the full discussion here. Obviously many disputes were more complicated and could not adequately be resolved this way. English judges developed entire separate systems to handle more complicated disputes, with decisions not by juries but by judges. Smith, History of the Common Law: Equity was able to administer more complicated remedies like injunctions orders from a court to do something or not to do something , besides giving money damages. By the eighteenth century, judges in equity had to give written reasons for their decisions, and those decisions could be appealed. The Seventh Amendment is based on the distinction between common law and equity. Jury Trial Is Even More Poorly Suited to Deciding Modern Civil Cases Civil jury trial has always been problematic, but changes have occurred since the late eighteenth century that make jury trial even more difficult and rarer. Here are some of the most important: Disputes that can go to a jury are more complicated and confusing. Because states and the federal government have merged the systems of common law and equity, the old common-law restrictions on cases going to a jury are gone. Now, juries can hear cases involving many parties, many claims, and complicated issues. Technology has grown more

complex, and business transactions more intricate. Evidence is increasingly in written, numerical, or scientific form, which is often difficult for jurors to understand. Judges have lost the power to comment on evidence to the jury, to help jurors understand the case. Jury trials have become longer and more expensive. Even apart from disputes becoming more complicated, the adversarial system in the United States has slowed down jury trial. Jury trials are often a heavy burden to jurors, their families, and their employers. Trials are often unnecessary, because parties now have many ways to get information before trial. At common law, there were few ways for a party to get information about the case before trial. Trial was needed to find out what happened; surprise was a major problem. After the merger of common law and equity, parties have many ways to get information before trialâ€”all taken from equity. A judge now can decide before trial that a party does not have enough evidence to go to a jury, in a procedure called summary judgment. There was no summary judgment at common law, because there was no pretrial discovery. In the eighteenth century, a judge did not know what evidence a party could produce at trial. Pretrial discovery changed that. Civil jury trial is nearly gone in the United States, and for good reason. Promising reforms are developing in investigating and resolving civil disputes. These could be more thorough and effective without the remaining hindrance of the Seventh Amendment.

Chapter 3 : Beware The P-Value â€“ Science-Based Medicine

Bruce Pounder, CMA, CFM, Editor FINANCIAL REPORTING Another Fair Value Controversy U sers of financial statements have become increasingly critical of the fair value option (FVO) for financial liabilities, an.

CV The p-Value Controversy: So, does that mean that there are certain important conclusions that p-values cannot derive? Does this sway our feelings about p-values just from the title? And the earliest of these citations is in ! For a long time, researchers have been foaming-at-the-mouth over p-values. After the initial damnation of p-values, Cohen gets into the actual concerns. First, he notes that people often misunderstand p-values. He notes the logic of NHST, when p-values are significant, is: If the null hypothesis is correct, then these data are highly unlikely. These data have occurred. Therefore, the null hypothesis is highly unlikely. Cohen dislikes this logic, and he notes that this logic can derive problematic conclusions. In the article, Cohen provides a slightly unusual situation which denotes the problem in the above reasoning. Most employees will not be on the Board of Directors in a company. Therefore, we can state the following, using the logic of NHST. If a person is employed, then s he is probably not on the Board of Directors. This person is on the Board of Directors. Therefore, s he is probably not employed. We know that, if an individual is on the Board of Directors, then they are employed. So, the logic of NHST led us to an inappropriate conclusion. To demonstrate the problem with this thinking, Cohen provides an example with schizophrenia. When we use the tool, our null hypothesis is that an individual is normal, and the research hypothesis is that the individual is schizophrenic. So, the problematic logic is: However, when we calculate the math for a sample of , some problems arise. Particularly, in a sample of , the number of schizophrenics is most likely The tool would correctly identify 19 of them and label one as normal. This result is not overly concerning. Alternatively, in the sample of , the number of normal individuals is most likely So, of the 50 people identified as schizophrenia, 60 percent of them would actually be normal! The problem in this example that we assume that the null hypothesis is false given the data a significant result , when we should think about the probably that the data could have arisen five percent chance given the null hypothesis is true. Third, Cohen notes that the null hypothesis is almost always that no effect exists. But is this stringent enough to test hypotheses? Cohen argues that it is not. He notes that, given enough participants, anything can be significantly different from nothing. Also, given enough participants, the relationship of anything with anything else is greater than nothing. Instead, results can only be statistically significant when analyzing p-values. This is because p-values are derived from magnitude, variance, and sample size. If a p-value is significant at a 0. Instead, the magnitude of the effect can be identical, and the sample sizes of the two groups are just larger. These four aspects represent the primary concerns of Cohen. In his article, he also suggests some modest solutions to p-values and NHST. Probably the most adopted is the use of confidence intervals. Confidence intervals indicate a range of values that we can expect the effect to fall within, based upon the magnitude of the effect and standard error. If a confidence interval contains zero, then it cannot be significantly different from random chance. Several authors published responses. Further, in response to a different article, Cohen claims that he does not question the validity of NHST but only its widespread misinterpretation. My Two Cents In general, I think p-values are alright. Before you gather your torches and pitchforks, let me explain. A p-value can provide quick, easy information, but any researcher should know to look at effect sizes and the actual study results to fully understand the data. There is so much more to know. Also, while confidence intervals provide more information, their application usually provides the same results as p-values. Researchers often just look for confidence intervals outside of zero and move on. Lastly, p-values are a great first-step into understanding statistics. Common Questions Who invented the p-value? Karl Pearson but Ronald Fisher popularized it. What is a p-value? A p-value is the probably that the observed data occurred due to random chance. When do I use a p-value? Most inferential statistics will include a p-value. Why is the p-value controversial? Many authors misinterpret p-values which leads them to inappropriate conclusions. Is a p-value a measure of effect size? Summary A p-value indicates the probably that the observed data occurred due to random chance. Usually, if the p-value is above 0. If it is below 0. While p-values are good first-looks at data, everyone should know how

to interpret other statistical results, as they are much better descriptions of the data. It is likely that I will revisit this page in the future. If you notice anything missing, please contact me at MHoward SouthAlabama.

Chapter 4 : Beyond Saying Thank You

It's currently #13! I'm so excited to be an author of this amazing book that is full of healing energy! If you're looking for healing in any area of your life, you will find SO much wisdom in this book!

Clinical Trials Beware The P-Value The p-value was meant to be used as a convenient and quick test to evaluate how likely a result was due to chance, or a real effect. It has since come to be treated as an indication of importance or truth, particularly in the CAM world. This is a problem. Steven Novella on July 2, Shares from xkcd by Randall Munroe Part of the mission of SBM is to continually prod discussion and examination of the relationship between science and medicine, with special attention on those beliefs and movements within medicine that we feel run counter to science and good medical practice. Chief among them is so-called complementary and alternative medicine CAM â€" although proponents are constantly tweaking the branding, for convenience I will simply refer to it as CAM. Within academia I have found that CAM is promoted largely below the radar, with the deliberate absence of public debate and discussion. I have been told this directly, and that the reason is to avoid controversy. This stance assumes that CAM is a good thing and that any controversy would be unjustified, perhaps the result of bigotry rather than reason. The reality is that CAM is fatally flawed in both philosophy and practice, and the claims of CAM proponents wither under direct light. I take some small solace in the observation that CAM is starting to be the victim of its own success â€" growing awareness of CAM is shedding some inevitable light on what it actually is. Further, because CAM proponents are constantly trying to bend and even break the rules of science , this forces a close examination of what those rules should actually be, how they work, and their strengths and weaknesses. This brings me to the specific topic of this article â€" the dreaded p-value. The p-value is a frequentist statistical measure of the data of a study. Unfortunately it has come to be looked at by non-statisticians as the one measure of whether or not the phenomenon being studied is likely to be real, even though that is not what it is and is never what it was meant to be. As an aside, this trend was likely driven by the need for simplicity. People want there to be one simple bottom line to a study, so they treat the p-value that way. For background, the p-value is the probability that the data in an experiment would demonstrate as much or more of a difference between the intervention and control give the null hypothesis. In clinical studies we can rephrase this to: Many people, however, misinterpret the p-value as meaning â€" what is the probability that the treatment works. Pandolfi and Carreras correctly point out that this is committing a formal logical fallacy, the fallacy of the transposed conditional. To illustrate this they give an excellent example. The probability of having red spots in a patient with measles is not the same as the probability of measles in someone who has red spots. In other words, the p-value tells us the probability of the data given the null hypothesis, but what we really want to know is the probability of the hypothesis given the data. No worries â€" Bayes Theorem comes to the rescue. This is precisely why we at SBM have largely advocated taking a Bayesian approach to scientific questions. A Bayesian approach is ironically how people generally operate. In science the logic of the Bayesian analysis is essentially: Pandolfi and Carreras point out that, ironically, this is how doctors function in everyday clinical thinking. When we see a patient we determine the differential diagnosis, a list of possible diagnoses from most likely to least likely. When we order a diagnostic test for a specific diagnosis on the list, we first consider the pre-test probability of the diagnosis. This is based upon the prevalence of the disease and how closely the patient matches the demographics, signs, and symptoms of that disease. We then apply a diagnostic test that has a certain specificity and sensitivity, and based on the results we determine the posterior probability of the diagnosis. Therefore, the pre-test probability is essential to determining the likelihood that a diagnostic test is either a false positive vs a true positive, or a false negative vs a true negative. Ironically, this logic is abandoned when evaluating scientific research. In fact, the main flaw in the way evidence-based medicine is applied is that it ignores the pre-test probability, and relies heavily on an indirect measure the p-value in isolation to interpret test results. If applied to clinical medicine, such a process would constitute gross malpractice. To drive this point home a little further, using a p-value in isolation in a clinical study to determine if the phenomenon under study is real is like using a non-specific diagnostic test to determine that a patient has a very rare

disease, ignoring predictive value and the possibility of a false positive test. As experienced clinicians understand, if a disease is truly rare, then even a reasonably specific test is far more likely to generate a false positive than a true positive. The analogy here is this â€" when studying a phenomenon that is unlikely, a significant p-value is far more likely to be a false positive than a true positive. This is why p-values are especially problematic when applied to CAM. CAM modalities are alternative largely because they did not emerge from mainstream scientific thinking. In many cases, the claims made are incompatible with modern science. Homeopathy, for example, would require rewriting the physics, chemistry, physiology, and biology textbooks to a significant degree. Apparently violating basic laws of science at the very least renders a hypothesis equivalent to a rare disease â€" having a low prior probability. Therefore, even with an impressive looking p-value of 0. Conclusion The Pandolfi and Carreras paper nicely illustrates one of the core principles of science-based medicine â€" putting the science back into medicine. Evidence is not enough, we also have to put that evidence into the context of our basic scientific understanding of the world, expressed as a prior probability. It may not be possible to have a rigorous quantitative expression of that prior probability, but we can at least use representative figures. For example, Pandolfi and Carreras use a prior odds of 9: This is being generous, in my opinion, as I would give odds of But even using the highly conservative odds of 9: The two take-home messages here are these: Favor, rather, a Bayesian analysis. Even in the absence of a formal Bayesian analysis, an informal Bayesian approach will help put the study results into context. Second â€" we should probably raise the bar for statistical significant. A p-value of 0. Mark suggested we set the bar at 0. Doing this will work massively against the interests of CAM , because of their low prior probability. But this is in the interests of good medicine. Novella also has produced two courses with The Great Courses , and published a book on critical thinking - also called The Skeptics Guide to the Universe.

Chapter 5 : The Value Controversy

The Value Controversy, edited by Ian Steedman with contributions from Erik Olin Wright, Verso Contributors: Ian Steedman, Paul Sweezy, Simon Mohun, Anwar Shaikh, Sue Himmelweit, Geoff Hodgson, Erik Olin Wright, Pradeep Bandyopadhyay, Michael de Vroey, Makoto Itoh, G.A. Cohen.

Chapter 6 : The British Monarchy: The Value and the Controversy | Ashbrook

Beware The P-Value. This stance assumes that CAM is a good thing and that any controversy would be unjustified, perhaps the result of bigotry rather than reason.

Chapter 7 : Amount in controversy - Wikipedia

Abstract. Recent controversy regarding the meaning and usefulness of weak values is reviewed. It is argued that in spite of recent statistical arguments by Ferrie and Combes, experiments with anomalous weak values provide useful amplification techniques for precision measurements of small effects in many realistic situations.

Chapter 8 : White Paper: The P Value Controversy â€“ MedNet Solutions

controversy surrounding fair value accounting Over the past few years, an increasing number of U.S. accounting standards have required companies to use fair value accounting.

Chapter 9 : Why the Ban on P-Values? And What Now? | R-bloggers

the p-value are two ï¬€t things. The controversy exists because p-values are being used as decision rules, even though they are data-dependent, and hence cannot be formal.