

Speech of Science Journalist: The Failure of Reproducibility in Science

Reproducibility Crisis, a speech given by prolific award-winning NPR journalist Richard Harris on October 19th. This speech is based on his new book, *Rigor mortis*, for UIUC students and faculty. The speech including 3 parts: What happened in science as "Reproducibility Crisis", the possible reasons, and the potential solutions.



Mr.Harris in the Speech

As the cornerstone of modern science, the reproducibility partly decides the reliability of science research results. Those based on the unreproducible results would not only be a waste of the money of tax payer, but also lead the science toward astray and cause dangers to the public. Although the NIH has provided more and more money for science research, the overall trend in R&D efficiency is decreasing, because of the problem of reproducibility. The situation is serious right now, "52% scientists said there was a crisis of reproducibility". And it is not a new problem, as Mr.Harris said, "I don't actually like the word crisis, because the crisis is.....something brand new, but.....has happened for a long time."

The whole story started from the bombshell story of failure in medical research exposed by Glenn Begley, a biomedical researcher. As Mr.Harris said in the speech, the successful repeated trail from all more than 50 trails, "Only reproduced 6".

And it is not an isolated incident. Mr.Harris found that it is not only happened in biomedical field, but also in the filed of other science, like Psychological science.

The reason of this situation is complex. One of the primary causes of this problem might be ingredients, for example, the contaminated HeLa Cells. The other one might be the design of the experiment. And sometimes people hope the successful experimental therapies may work as well on people. But, as Mr. Harris said about the TomMurphy's Drug Trail, "It works on mice but not on people". Besides, the scientists are also part of this problem. "Scientists want to keep their lab open", so Scientists try to give the most delight, "The most fancy, splashing" results and win more balance. As he showed on the screen, the appearing frequency of 25 positive words toward science research especially like "innovative" and "unprecedented", has increased 15000% in the past 40 years.

However, as Mr.Harris said after the speech:"It indeed surprised me", many scientists have realized the problem, and they would like to talk about this controversial topic, which might even destroy the public belief of science. Possible solutions are also provided, like using validating ingredients, transparency in research, better training, easing the financial crunch, and peer-review of the results, which is one of the most important ways. As one of the students came to this speech said, "I think the institutional incentive need to be changed is very important", the part of solution was concerned the most by the audience, and several of them asked questions related to this in the Q&A part.



Audience Asking Question

People come to this speech for different reasons, some come because they want to learn more about the idea toward science from the Journalists, as a lady married with a scientist said, she wanted to come because sometimes Journalists gave wrong retelling of science issue to the public. The audience speak highly of this speech. As a faculty said about this speech, “High -level speech”, and a graduated student in laboratory department said, “Absolutely”, when she was asked about whether she liked this speech or not.



Mr.Harris signing for audience