Project Part 2

One of the most practical skills of a statistician is statistical intuition, a sixth sense that comes into play and becomes a crucial part of directing the development of whatever statistical analysis or testing one may be conducting. This is the fundamental message of *The Emperor's New Tests* (Perlman and Wu, 1999). In the paper, Perlman and Wu devise a fascinating allegory which demonstrates the importance of one's wisdom and intuition in statistics. In the story, the well-established and tried-and-tested likelihood ratio test was challenged by a young and ambitious statistician's New Test. At first glance, on the surface, the New Test indeed seemed superior to the antiquated likelihood ratio test in multiple aspects and was adopted in the Imperial Court. Then came along the wise and scholarly Emperor who, upon inspection, found that the New Test was defective. It was found that the examples proposed by the young statistician to demonstrate his New Test were tailored to make the likelihood ratio test look inferior but is, in practice, not nearly sensitive enough to properly conduct hypothesis tests and produce coherent results. The Emperor immediately was able to notice something wrong with the results of the New Test by virtue of his statistical intuition and eventually dismissed the incorrect New Test. The main message of this story seems to be that one should always rely on one's intuition above anything else in statistics and science in general; if something doesn't seem right then it could very well be incorrect. Another message is that knowledge and experience in a field are superior to clever tricks. Lastly, the moral of the story is that one should never be blinded by one's goals and ambitions and seek to cheat and manipulate to obtain desired results. The ends should not justify the means in science and the best way forward is to focus on the process, guided by intuition.

References:

Perlman, Michael D., and Lang Wu. “The emperor’s new tests.” *Statistical Science*, vol. 14, no. 4, 1999, https://doi.org/10.1214/ss/1009212517.