

File 20111003.1310: Don't make the statistical mistake of neglecting the 'difference of differences' as in [2]. The example: mutant mice cells respond at 30% to the chemical compound, which given the number of mice you have, you calculate is statistically significant; normal mice cells respond only 15% which calculates not to be statistically significant, but the researchers forgot to calculate the difference of differences, which in this made-up case is only 15%, a value that they already said is not statistically significant given the number of mice studied.

Example due to [1].

References

- [1] Ben Goldacre. What if academics were as dumb as quacks with statistics? The *Bad Science* blog, 2011. URI: <http://www.badsience.net/2011/10/what-if-academics-were-as-dumb-as-quacks-with-statistics/> retrieved 3rd October 2011.
- [2] Sander Nieuwenhuis, Birte U. Forstmann, and Eric-Jan Wagenmakers. Erroneous analyses of interactions in neuroscience: a problem of significance. *Nature Neuroscience*, 14:1105–1107, 26 August 2011.