

221β Baker street-pilot: a life as a consulting statistician

Disclaimer

I have decided to write a series of editorials, depicting the toughest and most intractable problems in the life as a statistician or an analyst: How to teach somebody a complex concept or methodology, especially when the client is not a genius at all. Although suited for this journal, the style of this series is not that of a typical academic article. Indeed, this is a series of short stories. However, if this non-traditional style is problematic, I respond as follows. The interpretation of *traditional* is a matter of culture, and there should be some room for researchers to express their thoughts in a freer style. In addition, the emphasis a journal places on upholding a certain tradition is the decision of the editorial office. I hope that the editorial office will agree that readers will enjoy this series.

Introduction

There are many good advice or mentoring cases on statistics for students or anyone who is wise enough and prepared to learn, and yes, I have had many such cases in my academic life. However, such beautiful moments, in all honesty, is the $p < .01$ level condition (pun intended). Do you remember hearing about Bayesian and Markov Chain Monte Carlo for the first time? Were you lost?

I decided to be realistic, getting out of the bed of roses in the Matrix (not the matrix in the statistical world). Through this series I will describe several awkward moments of statistics consulting that arose from an extraordinary client with severe statistical retardation. Such clients do not seem to understand anything, sow chaos and even shut down the Gestalt effects in our brain.¹ I am focusing on these situations. I will try to describe such moments as vividly as possible. However, please do not misunderstand my real motives. This series is not a psychodrama about consternation. By all means, we will enlighten the client, and this series will be the log of the voyage.

Each editorial will resemble the script for an episode of TV show. My final decision was whether to create a new character or borrow a familiar one. Then what character? Sherlock Holmes, *qui d'autre?* I will use the BBC series, *Sherlock*. The screenwriters describe Professor Moriarty, Sherlock's nemesis, as a *consulting criminal*: someone who helps criminals develop and execute a strategy, usually a murder. Conversely, Sherlock Holmes is known as a *consulting detective*.

I think that our *modus vivendi* as statisticians or analysts are similar to Sherlock's or Moriarty's, in that we help our clients to solve their problems. For this reason, we are *consulting statisticians*. The only difference between the Sir Arthur Conan Doyle's original Sherlock Holmes and ours is that he solves murders and we work with numbers.

I will intentionally refrain from an academic tone and resort instead to puns, witticisms and twist. However, the parts reserved for solving a problem or describing concepts and applications will be information-packed; novices might need to reread sections. To help readers, I may break the fourth wall and speak directly to them.

We are all set. Let's see what's going on at 221β Baker Street.

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221β Baker Street, Episode 1: A Study in Inanity 9 AM: A lazybones or a victim of bias

Knock, knock. Dr. John Watson opened the door, and a man in his mid-twenties entered in a hurry. "Have a seat. And what do you want from me?" said Sherlock in his signature fast and dry way of speaking.

The man answered, "I need to do an analysis, right now!"

"Who doesn't?" Talking to himself, sarcastically as always, Sherlock mumbled out of sheer boredom. "Describe your case, I mean the background and problem of your project simply and clearly."

"I am a fifth-year PhD student, and I have to finish final defense within an only a few months ... or..."

"No.", Sherlock said, "I don't care about *your* background. Tell me the background of your study and data."

The graduate school student hesitated. After a short silence, Sherlock and Dr. John Watson stood up. John walked to the door and opened it.

Sherlock yelled "Get out!" and went into the kitchen to make some tea. This is what Sherlock and John always did with a hopeless client.

"No, no... I will explain. Sorry, I am just confused from where things went wrong. I just got a call from my advisor. She said I need to rewrite the whole dissertation due to a fundamental error in analysis. She mentioned some jargon, but I did not understand it at all. How can there be so much jargon? I'm in the last term of my PhD program? This term will be the last term that my scholarship covers. I am desperate."

Sherlock and John sighed and sat down. Sherlock spoke very quickly, a sign of interest. "So, at least you're intelligent enough to get a scholarship."

After pausing for a couple of seconds, Sherlock said, "Let the game begin."

To be continued...

References

1. Carson NR, Miller HR, Heth DS, et al. Psychology the Science of Behavior. Ontario: Pearson Education. USA; 2010.