Analysis of Qt RD & qt data

When we use a Qt RD we usually attempt to analyze the data using qt techniques

“Statistics”

- Qt.RD and qt techniques are often referred to in ordinary conversation as “stats”.
- There are two major Categories (Types) of stats:
  - **Descriptive**

    These “describe” the data but make no inferences about association or correlation, etc.
  - **Inferential**

Descriptive Statistics

- The first use of statistics was descriptive.
- Governments collected information about various things that helped them to tax.
- Those early forms of statistics were not “mathematical” although they did involve numbers.
- The “State” was interested in how many people lived in a village or town and so many early statistics are rudimentary forms of demography.

The Ideal of Probability

- The notion of probability predates the development of mathematical statistics.
- “1066 and all that” – The Trial of the Pyx
- “The Pyx” was the box coins were kept in.
- Variation in weight (tolerance of 5 grains)
- The Norman Conquerors did not understand mathematical statistics very well but they had an intuition about the notion of an average deviation. (100 coins = tolerance of 500 grains)
- By the 1830s statistical techniques were widely used in astronomy (*mechanique celeste*).

Adolphe Quetelet (1796-1874)

- 22 Feb. 1796 Ghent, Belgium- U. of Ghent
- “the effect is proportional to the cause” – an early statement of the notion of “r”
- From mechanique celeste to mechanique sociale was not a big leap!
- “Social Physics” was invented by Quetelet
- Auguste Comte used the new term “*sociologie*” since Quetelet had already used the term social physics.

“obliquity” in astronomy

- L. obliquus (ob-liiquus, towards the elbow) oblique
- OE, ME eln, ell, a unit of measure of 45 inches, used in cloth trade, hence elbow
- Inclined, indirect, hence devious
- Dishonesty, perversity, divergence
- “ecliptic” or angle between earth’s orbit and the view of the stars from earth, which changes approx. 0.47 seconds per year

“Normal Distribution”

- The study of obliquity and measurement errors led to an understanding in astronomy of the probability of something being “on target” (valid measurement)
- There were no laws to go by; no one knew exactly why the stars moved the way they seemed to move in the heavens
- Galileo was one of the first real astronomers to carefully observe the heavens and to get beyond the Aristotelian assumptions that were at the root of Christian theology (& much of Islam)