

Hampel, F.R.; Ronchetti, E. M.; Rousseeuw, P. J. & Stahel, W.A. (1986). *Robust Statistics: The Approach Based on Influence Functions*. John Wiley & Sons, NY.

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“In his very interesting discussion, Jeffreys (1939/61) analyzes nine long series of measurements, including six series of pseudoastronomical data by K. Pearson with about 500 observations each, made for a different statistical purposes, and two series of residuals from latitude observations of about 5000 observations each. He tried to fit symmetric Pearson curves and found that seven of the nine series were long-tailed than the normal, five significantly so, but only one was significantly shorter-tailed than the normal. However, he also noted (as had Pearson) that there were often strong serial correlations in the Pearson series (of supposedly independent observations!), and he discovered that there was a high, almost perfect correlation between the short-tailedness and the serial correlation (!). This means the less long-tailed the data (down to the normal or even shorter-tailed than the normal), the more one has to worry about serial correlations which invalidate standard errors, confidence intervals, and the like; closeness to normality may not be a reason for joy but a reason for even deeper suspicion.”