

Keen Reasoning Based on the Evidence of the Senses

Post by “Pacatus” of November 28, 2022 at 6:11 PM

To follow up (and maybe simplify), here is what I call the “generalized empirical formula” –

$$y = \mathbf{f}(x_1, x_2, \dots, x_n ; u) : p$$

where:

y is the dependent variable.

\mathbf{f} is some defined function.

x_n are the observed independent variables.

u represents unobserved/unconsidered variables (which may be unknown or unknowable).

p is some probability (e.g. a statistical confidence level).

As long as there is any u – or \mathbf{f} is uncertain (e.g., there is more than one possible function describing the relationships) – p must be < 1. Further, to know that p = 1.0, one would also have to know that there are no u – and that \mathbf{f} is perfectly specified. I might call that an “infallibility condition.”

This is drawn from statistics, but I think is not confined to statistical analysis.