
Dear C.B.,

In connection with the evidence you gave us the other day of deviations in experimental data suggestive of a log normal distribution, I wonder if you have considered that even the exact frequencies of the logarithmic series would provide very similar evidence if treated in the same way, e.g. by comparing the frequency at unity, the sum of the frequencies for 2, 3, 4, and the sum of 5 to 12, etc., as indicating ordinates of a log normal curve.

The series you obtain depends, of course, not only on the value of $x$ in the logarithmic series, and when $x$ is as low as .9 it decreases from the start, giving, if I have the numbers right, the succession

\[
\begin{align*}
1.000000 \\
.902250 \\
.509741 \\
\end{align*}
\]

On the other hand, if $x$ is .99 you get

\[
\begin{align*}
1.000000 \\
1.064275 \\
.954131 \\
\end{align*}
\]

and this I think you would be tempted to interpret as though sampling had reached beyond the mode of a log normal distribution.
But from its origin it is obviously nothing of the kind, for
the frequencies used have been merely those of an exact
logarithmic series.

Yours sincerely,