

13th February 1934.

P.Lyle Esq.,
Wancote,
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Guildford.

Dear Mr. Lyle,

I have your letter of February the 10th, with its interesting problem. The agreement seems to be, on the whole, satisfactory, though the two values where x exceeds 2.875 are a little suspicious. I think I should set out the positive and negative deviations separately, unless your two correlations are equally positive and negative, and in this case I should make them all positive, and then see if the distribution of errors were appreciably skew.

I think the way I should have started would have been to translate the values of r into the values I call s namely

$$\begin{aligned} s &= \sinh^{-1} r \\ &= r + \frac{r^3}{3} + \frac{r^5}{5} + \dots \end{aligned}$$

of which there is a table in my book, and should have plotted the deviations of s from its value in the population. These from samples of 40 should give

a very good approximation to a normal curve with
variance $\frac{1}{n}$, if the sampling procedure is exact.

Yours sincerely,