Dr. R. A. Fisher,
Rothamsted Experimental Station,

Dear Dr. Fisher:

Several months ago I wrote asking your advice to make sure that I was correctly interpreting the new methods you developed in your paper "The General Sampling Distribution of the Multiple Correlation Coefficient," a reprint of which you sent me a year ago. As apparently my letter has failed to reach you, I am writing again.

The particular point on which I am uncertain is the exact meaning of the parameter $n_2$, in entering the table of the 95% points of $R$ and $r_1$. I understand that $n_1$ represents the number of independent variables; that is, $n_1 = 1$ is for simple correlation $r$; $n_1 = 2$ is for $R_1$, $n_1 = 3$ is for $R_1, 234$, etc. But I have not been able to be quite certain whether $n_2$ should be taken as the total number of paired observations in the sample ($n'$, as used in your textbook), whether it should be $n' - 1$, or whether $n_2 = n' - n_1$.

As I would like to make use of this latest development of your methods for judging the reliability of observed multiple correlations in some material which I am about to publish, I am anxious to make exactly the right interpretation of your conclusions. For that reason I would appreciate as early a reply as is convenient for you.

With much appreciation for the pioneer work you have been doing, and for your help, I am

Sincerely yours,

Mordecai Ezekiel,
Assistant Chief Economist.
Provable minimum correlation in universe, for varying observed correlations and size of sample

**SIMPLE CORRELATION:** \( Y = a + bX_2 \)

Under conditions of simple sampling the odds are 19 to 1 that the correlation in the universe would be at least as high as the "probable true correlation."
Probable true correlation

Probable minimum correlation in universe, for varying observed correlations and size of sample

3-VARIABLE MULTIPLE CORRELATION:

$$X_1 = a + b_2 X_2 + b_3 X_3 + b_4 X_4$$

Under conditions of simple sampling, the odds are 19 to 1 that the correlation in the universe would be at least as high as the "probable true correlation."
Fig. 3.

Probable true correlation

Probable minimum correlation in universe, for varying observed correlations and size of sample

7-VARIABLE MULTIPLE CORRELATION:

\[ X_1 = a + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 \]

Under conditions of simple sampling the odds are 19 to 1 that the correlation in the universe would be at least as high as the "probable true correlation."