

February 13, 1941

Dear Jackson,

On the question of length of life I enclose a shot by W.L. Stevens of this Department at giving a graphical demonstration. I do not know, but perhaps this will help some of your party in the rather intricate tangle of arguments which may be developed on the subject.

The question of two variables both subject to errors of observation and the relation between a supposed true linear relationship between them and the regression lines obtained from the observations has been a good deal discussed. Of course, the true relation, if it exists, will lie between the regression lines, but, according to the circumstances, it may lie anywhere between them. It really depends on the partition between the true variation with a covariance which is the geometric mean of the two true variances and a superimposed error variation in which usually, but not always, the errors are uncorrelated, but often unequal.

What usually makes these discussions rather fruitless and academic is the question of the use to which it is proposed to put the true regression line when estimated. If the intention is to use one observation in order to predict or forecast the second,

then there is no doubt that the ordinary regression of the second on the first gives the best prediction, so that the true line, if obtained, would not be what was wanted.

Your paper is out in the last Annals, and I thought looked very well. I hope you will like it when you see it. ~~85~~ Fifty-five copies will be sent to you, i.e. 25 free and 50 extra.

Yours sincerely,