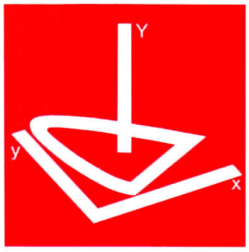

The Rensselaer Color Measurement Laboratory

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June 7, 1976

Mr. Rolf Kuehni
Verona Dyestuff
Springfield Road
P. O. Box 385
Union, N. J. 07083

Dear Rolf:

Ruth and I have retrieved your letter of February 26, 1976, in which you ask whether I can agree with one of two statements, namely that color-difference vision at threshold and for larger differences is continuous, or is not.

In retrospect, I think one reason I did not reply at once, which ultimately led to the letter getting misplaced, is that I am not sure I agree fully with either statement. Depending on how you interpret the word "continuous," there seem to be other alternatives. Somehow I dislike the idea of an abrupt discontinuity in the mechanism or results of color-difference vision at some specific point as the magnitude of the color difference gets larger. I suspect you didn't mean this, either, and if you will allow substitution of the idea of nonlinearity or distortion, then I would be happier.

In that case, I think I would also tend to agree with the second statement, which might be phrased to say that color-difference vision at threshold is non linearly related to that exemplified by, for example, the Munsell system. Here, of course, I am leaving room for speculation on why the nonlinearity exists, which may have a lot to do with differences in sample juxtaposition, surround, and other variables in the respective experiments.

My students and I have traced the linearity down as far as 3-4 j n d's by the pair comparison method; below that level, which would seem to be the interesting region if you are correct, we need another experiment. Can you suggest one?

Sincerely yours,

Fred

Fred W. Billmeyer, Jr.

FWB/li

cc: Ruth M. Rich