



Westinghouse Electric Corporation

Consumer Products

Lamp Divisions

One Westinghouse Plaza
Bloomfield New Jersey 07003

May 16, 1973

Dr. Rolf Kuehni
Verona Division of Baychem Corporation
P.O.Box 385
Union Metropolitan Park
Union, New Jersey 07083

Dear Rolf:

Thanks for your comments. I don't consider that there is disagreement. My visual response I consider to be system response, while your parent curves of Fig. 1 are surely "component" response. Is it not generally agreed that cone response functions characterize only the input part of the visual system, and that subtraction occurs thereafter?

I'd be happy to have your comments. Enclosed are two reprints in which, like so many others, I make use of difference functions to correlate with system response.

With best regards.

Sincerely yours,

W. A. Thornton

May 15, 1973

The Editor
The Journal of Color and Appearance
43 Morton Street
New York, N.Y. 10014

Dear Sir:

The spectral response of the human visual system as proposed by Thornton (1) is in apparent disagreement with many other such proposals based on the Young-Helmholtz Theory (2) and based on electro physiological investigations of the visual apparatus (3). It is generally assumed that the cone response functions are linearly related to color matching functions such as the CIE 1931 and 1964 functions. The literature cited by Thornton as being in agreement with his proposal includes both Young-Helmholtz type cone response as well as opponent color response data.

The disagreement can be resolved, however, by regarding the curves proposed by Thornton as difference curves representing the normalized unique response of receptor T from 400-495 nm, of receptor D from 495-570 nm and of receptor P from 570-700 nm, as illustrated by the hatched areas in Fig. 1. Fig. 2 shows such normalized difference curves determined by the writer from Fig. 1, indicating a remarkable resemblance to the curves proposed by Thornton.

Sincerely yours,



Rolf Kuehni

RK/vh

cc: Dr. W.A. Thornton, Westinghouse