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THE ATTENTION VALUE OF COLOR EVALUATED BY MEANS OF OCULAR PHOTOGRAPHY

HERMAN F. BRANDT

Innumerable research studies have been made to evaluate the attentivity of color. The general consensus of opinion is that color has attentional advantages over black and white, and in order to gain and sustain attention a bit of chroma thrown in will generally solve the problem.

Color, it is believed, attracts attention by creating a difference or contrast to the adjoining areas or objects. Color thus employed may be effective because it reproduces a product in its naturalness and lends distinction and an aesthetical experience. The color as used in this study refers to red only. Advertisements, colored packages, and commodities are for that reason more readily visualized and identified.

In spite of the added cost, color in advertising, in direct mail, mail order catalogs, newspapers and periodicals has increased steadily from its inception, so that today a large percentage of advertisements, regardless of the media, are printed in chroma.

To determine the relative attention value of color as compared to black and white, numerous well known techniques of pre and post publication testing have been employed. Direct mail returns, split run tests, prompted surveys of readership, unaided or aided recall methods, and the spot testing method are among those commonly employed.

Without reviewing the findings of respective techniques utilized to evaluate the attention value of the variable under consideration, results have been such that only conditional conclusions could be drawn. In practice, however, the attentivity of color has been deemed sufficiently adequate to offset the additional cost to the advertiser.

PURPOSE AND PROCEDURE

The purpose of this study was to evaluate by means of ocular photography. The attentivity of red as compared to black and white of a given field. Fifty subjects were selected at random to observe an exposure card, while their eye movements were photographed. Two advertisements, one in color and the other in black and white constituted the experimental subject matter. The two advertisements were identical with the exception of the color red. Each subject observed the advertisement and editorial for a period of fifteen seconds. In no case was the subject informed of the purpose of the tests nor was the time limit revealed. The distribution of time between the two advertisements was recorded by a Bidimensional Eye-Camera, designed and developed by the author.

TABLE I

Relative time in per cent spent by 50 subjects on editorial and advertisers copy respectively.

	Advertisement	Editorial
Variable	Percent of total time	Percent of total time
Red and White	39.0	61.0
Black and White	47.8	52.2

The advertisement in black and white as well as the one in red and white was placed on the left of the editorial.

The results of the test reveal that in terms of time spent red and white had no attentional advantage over black and white. To the contrary more time was spent on the advertisement in black and white but the difference was not significant C.R. 63. This tendency may be due to the fact that subjects dislike to read print in color. Red in these advertisements had an initial attention value but failed to sustain it for more than the first two seconds. Evidently the visibility of type was low and hence perceptual difficulties encountered counteracted the attentional advantages of chroma present.

To verify the assumption of the above test, namely, that the **black** print on a red background was largely responsible for the low attention value of red, another test was devised. The purpose of this test, as for the preceding one was to evaluate the relative attention value of red versus black and white.

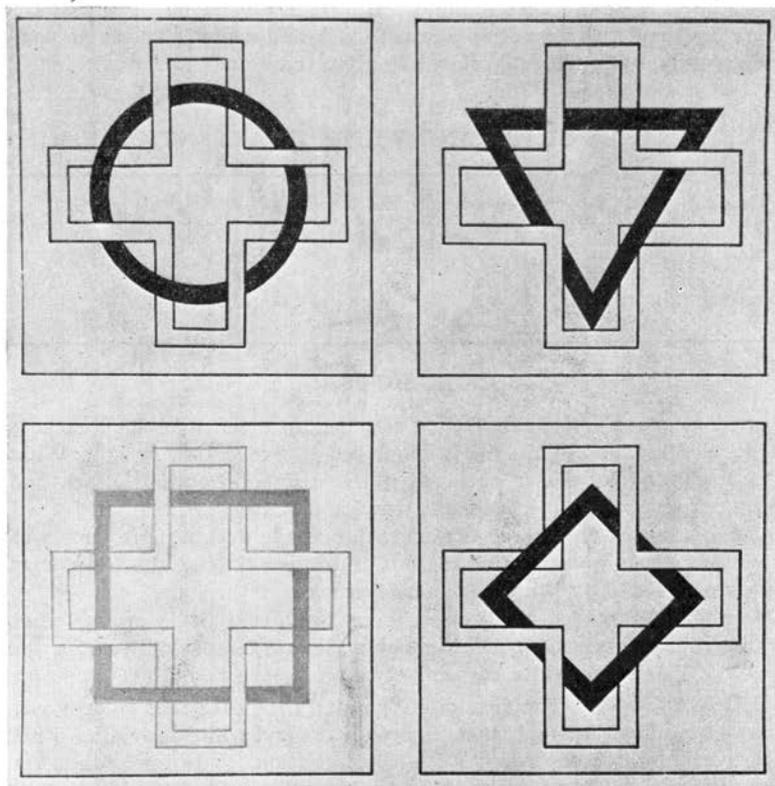


Fig. 1. Exposure card 33 cm. square.

Four designs as illustrated in Fig. 1 were mounted on four different cards. Each design appeared in red on one of the four cards thus eliminating the position and character of design factor. Thirty subjects observed each of the four cards, for a period of ten seconds.

RESULTS

Tables below represent the relative time in seconds spent by each group of thirty subjects on each of the four designs of the respective cards.

TABLE II
RELATIVE TIME IN SECONDS DEVOTED TO EACH OF THE
FOUR DESIGNS

Red and White

92.9	101.5
68.7	73.6

Black and White

83.6	77.3
66.2	56.1

Table II indicates that red and white when appearing in any of the four positions and competing against black and white in the same position, receives significantly more attention than black and white.

TABLE III
RED VERSUS BLACK AND WHITE IN ATTENTION TIME

Color	Mean	SE	Mdiff.	SEdiff.	CR
Red and White	2.92	.11			
Black and White	2.35	.04	.57	.11	5.18

CONCLUSIONS

Red as revealed by this second test has an attensity which exceeds that of Black and White when employed in proportion of 1:3. What results might have been obtained if the ratio of Red and Black had been 2:2 or 3:2 is not known as a result of this experiment.

Regardless of chroma or the character of the design more time was spent on areas appearing on the left and upper half of the field, than on areas located on the right and lower half of the page.¹

No significant sex differences were revealed in this study, when comparing the relative time spent by male and female subjects on the red and black and white respectively.

IMPLICATIONS: The results of the study indicate that color (red) may have attentional advantages over black and white providing other observational factors receive due consideration. It is likely that the way color is employed rather than the amount or kind used is the determining factor accompanying its effectiveness.

If color is effective only to the extent to which it creates a difference between itself and its neighboring area, chances are that both the chromatic and achromatic areas will receive more attention when using color than would be the case if the field was uniformly black and white.

Since this study is mainly interested in the relative attention value of color (red) in a given field, it provides no information about the relative attention value of color when 50 or even 75 per cent of the areas appear in color. It is conceivable that color with all the alleged attentional advantages may reach a saturation point when displayed with a multible of variables of the same type. In a proportion where every advertisement in a given spread or periodical appear in color it is likely that a single black and white display would be superior in attentional advantages.

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¹Brandt, Herman F. "Ocular Patterns and Their Psychological Implications". *Ann. Jour. of Psychology* Vol. 53, No. 2. April 1940 pp. 260-268.