

COMMENTS ON A TEST OF THE PERSONALITY-SATIATION- INHIBITION THEORY

H. J. EYSENCK

University of London

A recent paper by Rechtschaffen (6) purports to test the theory that extraverts develop more reactive inhibition (I_R) than introverts (3). The author concludes that "the results do not support the hypotheses that amount of after-effect is related to introversion-extraversion, [or] that accumulation of I_R is related to introversion-extraversion. . . ." Some comments would appear to be appropriate regarding these conclusions. (I shall not deal with the author's work in so far as it does not involve personality directly as a variable.)

Rechtschaffen used two tests: (a) a visual figural after-effect measure and (b) inverted alphabet printing. Extraversion was measured by means of Guilford's R scale. Of the experimental scores used, we may first comment on the measure of reminiscence used in connection with the second test. The score on the last 60'' of work *pre-rest* was subtracted from the score obtained during 60'' of work *post-rest*. This contravenes an important aspect of the theory under investigation: that there is a considerable increase in performance after rest due to the extinction of sI_R (2); this necessitates the use of the shortest possible post-rest period for measuring reminiscence, as otherwise the effects of post-rest extinction will swamp those of reminiscence. It is for this reason (and others, cf. 2) that I have preferred pursuit-rotor performance to alphabet printing, a single 10'' performance after rest giving reasonable reminiscence scores on the rotor. A 60'' period is too long to provide a proper test of the theory that reminiscence should be stronger in extraverts, and consequently this part of Rechtschaffen's work may be dismissed. It should also be noted that the length of the rest was only 60''; this is totally inadequate for I_R to dissipate. Our own practice has always been to allow 10' rest periods. Rechtschaffen complains that predictions regarding personality correlates of reminiscence are "conflicting" because extraverts should show greater recovery *in toto*, but might show less at any particular moment because of their slower recovery from I_R ; "possibly, the two factors could both be operating and mask each other." This objection argues against the use of short rests, but is irrelevant when rests long enough to ensure the dissipation of all or almost all I_R are employed. Alternatively, Treadwell's procedure (7) might be followed; she systematically varied the length of the rest and found evidence directly favouring both deductions from my postulate. It is not clear why Rechtschaffen, in testing the theory, did not follow the usual practices of

arranging for rest and test periods, but used periods which, according to the theory under investigation, would be most unsuitable for giving positive results.

For the main measures relating personality to inhibition/satiation, on the appropriate one-tail test the inhibition score is significant at the 5% level, and the satiation score falls just short of significance. The joint probability of two independent scores being in line with prediction at or near the 5% level of significance is less than 1 in 100. It is difficult to regard these results as inconsistent with the theory.

Admittedly the correlations are not particularly high, but we must bear in mind the effects of attenuation. Rechtschaffen reports a reliability of the satiation effect of only .52; this sets quite rigid limits to the possible correlation between personality and satiation as measured. (He also criticizes the reliabilities reported by me (1) and by Wertheimer (8) as being too high. If this is so, then the correlations actually reported in my paper between personality and satiation, when corrected for attenuation, would be higher than they are when my own reliability figures are used.) As regards the validity of the R scale as a measure of extraversion, we have found in several studies (4, 5) that its factor loading is between .4 and .6, with an average of about .5. If satiation is perfectly correlated with extraversion, then the expected correlation between the measures of the two variables chosen by Rechtschaffen would be roughly $.5 \times .5 = .25!$ From this point of view the reported correlations must be regarded as more respectable than they look at first.

It may be objected that correlations so small, even though significant, cannot be of any practical importance. Such an objection would be quite counter to the true spirit of science. Parallax effects in stellar motion and the bending of light rays in passing the sun are both phenomena of minute physical size and apparent practical importance; yet they rightly find their place in textbooks of physics because they establish certain theories they were called upon to test (i.e., the heliocentric and the relativity theories). Similarly, the relationships between satiation/inhibition and personality, as measured in studies such as that of Rechtschaffen, need not be large to establish an important and fundamental theoretical truth; from the point of view of practical application, much superior measures will no doubt be found once the theory is worked out in more detail and established more firmly. That this is true seems to emerge with some certainty from our most recent work (4).

Summary.—The apparently negative outcome of an experimental test of the writer's Satiation/Inhibition theory of personality is examined in detail, and found to be not inconsistent with that theory in its main results.

REFERENCES

1. EYSENCK, H. J. Cortical inhibition, figural after-effect, and theory of personality. *J. abnorm. soc. Psychol.*, 1955, 51, 94-106.
2. EYSENCK, H. J. "Warm-up" in pursuit rotor learning as a function of the extinction of conditioned inhibition. *Acta Psychol.*, 1956, 12, 349-370.
3. EYSENCK, H. J. *Dynamics of anxiety and hysteria*. London: Routledge & Kegan Paul, 1957.
4. EYSENCK, H. J. *Experiments in personality*. London: Routledge & Kegan Paul, in press.
5. HILDEBRAND, H. P. A factorial study of introversion-extraversion. *Brit. J. Psychol.*, 1958, 49, 1-11.
6. RECHTSCHAFFEN, A. Neural satiation, reactive inhibition, and introversion-extraversion. *J. abnorm. soc. Psychol.*, 1958, 57, 283-291.
7. TREADWELL, E. Motor reminiscence and individual personality differences. Unpublished thesis, Univer. of Belfast, 1956.
8. WERTHEIMER, M. The differential satiability of schizophrenic and normal subjects: a test of a deduction from the theory of figural after-effects. *J. gen. Psychol.*, 1954, 51, 291-299.

Accepted April 28, 1959.