

## REMINSCE AS A FUNCTION OF REST, PRACTICE, AND PERSONALITY

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I have suggested that extraverts develop  $I_R$  more quickly, dissipate it less quickly, and develop it to greater strength, than do introverts (Eysenck, 1956a). Recent experiments by Treadwell (1956), Star (1957), Das (1957), Rechtschaffen (1958), Ray (1959), Claridge,<sup>2</sup> Eysenck (1960) and Lynn (in press), using reminiscence as a measure of  $I_R$ , have been summarized by Eysenck (in press); under suitable conditions, reminiscence correlates significantly with extraversion. "When the relevant results of Eysenck (1956), Star (1957), Lynn (in press), and Claridge<sup>2</sup> are averaged, the mean correlation between reminiscence and extraversion is .36; that between reminiscence and neuroticism is .03 (Eysenck, in press).

In the present experiment, 240 engineering apprentices of between 16 and 18 years of age were tested on a modified Lafayette 60 rpm pursuit rotor. Trials were scored in terms of seconds on target during 10-sec. periods.<sup>3</sup> Reminiscence was defined as performance on the first post-rest trial minus that on the last pre-rest trial. Eight groups of 30 Ss underwent courses of massed practice differing in length of pre-rest practice (3 min. or 8 min.) and in duration of rest (30 sec., 2 min., 6 min., and 20 min.) All Ss were administered the short form of the M.P.I. (Eysenck, 1959a). For the purpose of analysis the 30 Ss within each experimental group were subdivided according to their extraversion score; there were in each case three such groups—high, low, and average scorers. Allocation was not unique because of overlapping scores; random allocation was resorted to in these cases.

As expected from the work of Ammons (1947 a, b), Irion (1949), and Kimble & Horenstein (1948), reminiscence was an *increasing* function of both amount of practice and rest. Mean values for the two practice periods are .69 and .98; for the four rest periods they are .61, .72, 1.15, and .84. Both main effects are significant at the .01 level by analysis of variance (Table 1). Extraverts, ambiverts and introverts have *decreasing* reminiscence scores: .94, .88, and .69. This predicted effect falls short of significance (Table 1). (It has already been mentioned that in the case of over-lapping scores, cases were

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<sup>2</sup>Unpublished study discussed in Eysenck (1960).

<sup>3</sup>Tables of raw data by condition have been deposited with the American Documentation Institute, Photoduplication Service, Auxiliary Publications Project, Library of Congress, Washington 25, D. C. Order Document No. 6350, remitting \$1.25 for 35-mm. microfilm or \$1.25 for photocopies.

assigned at random to personality groups. The first such allocation actually gave a significant  $F$  ratio for extraversion; the second random allocation presented here did not. It seems clear that the main effect is of borderline significance.)

TABLE 1  
ANALYSIS OF VARIANCE OF DIFFERENCE SCORES ADJUSTED FOR DIFFERENCES  
IN LAST PRE-REST TRIALS

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Trials (T)	1	6.7245	10.301	.01
Between Rests (R)	3	3.7522	5.7479	.01
Extraversion-Introversion (E)	2	1.3724	2.1023	n.s.
T × R	3	1.6760	2.5674	n.s.
T × E	2	1.0816	1.6569	n.s.
R × E	6	1.6751	2.5660	.05
Residual	221	.6528		

The predicted faster rate of dissipation of  $I_R$  of extraverts would lead to an interaction effect of Rest × Extraversion, such that shorter rest periods would produce greater differences between groups. This interaction effect was found to be significant ( $p = .05$ ) (Table 1), and the detailed results are given in Table 2. There is indeed a decrease in the size of the differences from the 30-sec. rest, through 2-min. to 6-min. rests. This, however, is followed by an increase in the case of the 20-min. rest. Results are therefore only partly in line with prediction.

TABLE 2  
MEAN REMINISCENCE OF EXTRAVERTS, AMBIVERTS, AND INTROVERTS AFTER VARYING  
AMOUNTS OF REST, AND DIFFERENCE BETWEEN EXTRAVERTS AND INTROVERTS ON  
REMINISCENCE FOR ALL FOUR REST PERIODS

Group	Durations of Rest				Mean
	30"	2'	6'	20'	
Extraversion	.92	.66	.97	1.19	.94
Intermediate	.62	.98	1.06	.86	.88
Introversion	.28	.53	1.42	.52	.69
Difference: (Extraverts-Introverts)	+.64	+.13	-.45	+.67	

A similar analysis was undertaken with respect to neuroticism. No significant main effects or interactions were found. Another analysis was carried out to study the effect of using different reminiscence scores. Ray (1959) and others have used 20-sec. and longer trials, and I have suggested that in

such cases the extinction of conditioned inhibition (Eysenck, 1956b) interferes with the measurement of reminiscence. Using combinations of two and of three trials instead of single 10-sec. trials, the analysis shown in Table 1 was repeated; the  $F$  ratio for extraversion dropped from 2.10 to 1.34 and 1.28, respectively, suggesting that to get optimum effects only short trials should be used. (The Rest  $\times$  Extraversion effects also showed a drop in  $F$  ratio from 2.57 to 2.29 and 2.32).

This point may require some elaboration, particularly as it also has a bearing on the choice of reminiscence measure. Ammons (1947a) has suggested a method of correcting reminiscence scores for warm-up effect, i.e., the very noticeable upswing in performance during the first few post-rest trials; this correction has not been applied here for the following reason. The writer has argued that the major part of this upswing in performance is not in fact due to warm-up at all, but rather to the extinction of conditioned inhibition which occurs because of the failure of  $sI_R$  to be reinforced by involuntary rest pauses during the first few post-rest trials, i.e., until such a time when  $I_R$  has built up again to the level of  $D$ . Experimental evidence in favour of this theory was given in the original article (Eysenck, 1956b) in which it was suggested that warm-up as usually conceived may play a much smaller part in post-rest upswing than is usually believed. If this be true, then Ammons' correction would grossly over-correct reminiscence scores; hence, the simple type of score here used has been preferred. It also follows that the measurement of reminiscence would be adulterated more and more by post-rest upswing (extinction of  $sI_R$ ) the longer the post-rest period used for measuring reminiscence. Hence our preference for 10-sec. periods over longer trials. The drops in level of significance as longer trial periods are used, to which attention has been drawn in the preceding paragraph, seem to lend support to this view.

#### SUMMARY

Reminiscence scores on the pursuit rotor were obtained from 240 adolescents, and were shown to be a function of duration of practice, duration of rest, and degree of extraversion-introversion.

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## ERRATUM

H. J. Eysenck, Reminiscence as a function of rest, practice, and personality. 1960 (August), p. 92 should read: "The predicted slower rate of dissipation of  $I_r$  of extraverts would lead to an interaction effect of Rest  $\times$  Extraversion, such that longer rest periods would produce greater differences between groups."

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