

# Allen. stud. eng.

(d) Effects of past experience 1000 - 102

The possible cumulative effects of classification as a function of past experience from the first session to the second were assessed by comparing the relevant scores in Expts. 1a and 1a with those in Expts. 1b and 1b. The effects of cumulative experience with the classification within a session were assessed by comparing the scores in the first six presentations of the series in Expt. 1b with those obtained in the last five presentations in that experiment.

Comparisons of first and second sessions: A  $2 \times 2$  analysis of variance was conducted on the shifts of the inter-class differences from Expts. 1a to 1b and 1a to 1b for groups, C, G, U and U<sub>1</sub>. The effects of past experience (Expts. 1a to 1b and 1a to 1b) are not significant. The same is true of the analysis of intra-class slopes, and of a separate comparison made of the shifts from first to second sessions in inter- and intra-class differences for groups C and R (Expts. 1a to 1b).

Effects of past experience within a session: It will be remembered that in Expt. 1b there were three groups of subjects, (C, R and U) who after having completed their judgements of the series presented six times, judged the length of lines in five additional presentations of the series. Table 4 sets out the group means obtained from these additional presentations. Figure 3 presents the percentage differences between the actual and apparent differences for judgements of each two adjacent stimuli; these percentages have been plotted as positive when the apparent differences exceeded the actual ones; as negative in the opposite case.

As can be seen from Table 4 and from Fig. 3, it is only at the predicted point of inter-class break (stimuli 4-5) that the apparent difference between the stimuli for group C exceeds considerably both the actual differences and the corresponding differences for the two control groups.  $\times$

Table 4 p 102  
 2 Linear functions were fitted to these data in the manner previously described. Group C was then compared separately with group R and with group U, both for its derived inter-class differences ( $Y_5 - Y_4$ ) and mean intra-class slopes  $\frac{1}{2}(m_4 + m_5)$ . The two control groups R and U do not differ from one another (see Table 5); the inter-class differences in

Classification and judgements of length

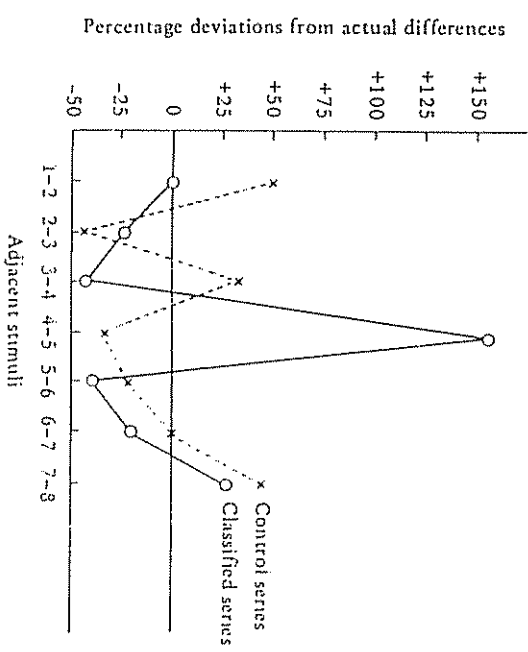


Fig. 3. Comparison of actual and apparent differences between adjacent stimuli in the second part of Expt. 1b

group C are significantly larger than those in group U at  $p < 0.01$ ; than those in group R at  $p < 0.001$ .

At the same time, the intra-class slopes show a tendency to be less steep in group C than in the two other groups; but this tendency does not reach statistical significance when group C is compared with each of the two control groups separately.  $\times$  Table 5 p 102

An inspection of these results shows indirectly the accentuated effects of the classification as function of repeated trials within the same session. A direct assessment of these cumulative effects of classification was made by calculating for each subject the shift of his scores for inter-class differences and for intra-class slopes from the first six to the last five presentations of the series. The statistical significance of the difference in these shifts between group C and each of the control groups was assessed separately. An inspection of the data in the second part of Table 2 and in Table 4 will show that, as function of practice within a session, apparent differences between the stimuli tended to decrease with the only clear exception of the inter-class difference in group C. The stability of the inter-class differences in group C within the session as compared with the decrease of the corresponding differences in the control groups does not quite reach statistical significance at  $p = 0.05$ . The decrease in the intra-class differences (i.e. the flattening out of the intra-class slope)

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compared with the corresponding decrease in each of the two control groups is significant in both cases at  $p < 0.01$

Table 4  
*Mean judgements of stimuli in the last five presentations of the series in Expt. 1b*

Stimuli	Class A				Class B			
	1	2	3	4	5	6	7	8
Actual values	16.2	17.0	17.9	18.8	19.7	20.7	21.7	22.8
Group C	17.1	17.9	18.6	19.1	21.4	22.0	22.8	24.2
Groups R and U	16.9	18.1	18.6	19.8	20.4	21.2	22.2	23.8

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Table 5  
*Mean inter-class differences and intra-class slopes in the last five presentations of the series in Expt. 1b*

Groups	Inter-class differences ( $\gamma_5 - \gamma_1$ )	Intra-class slopes
C	2.0	0.83
R	0.7	0.99
U	0.09	1.02

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