(conditioning vs. extinction) was significant ($F, 89.86$; $df, 1/10$; $p < .001$); but the Days by Conditions interaction was not ($F, 1.51$; $df, 10/100$; $p > .10$). A significant change in extinction performance over Blocks of trials ($F, 56.14$; $df, 3/30$; $p < .001$) and a significant Days by Blocks interaction in extinction ($F, 1.74$; $df, 30/300$; $p < .05$) indicated that reliable changes occurred within extinction days and that the form of the extinction function changed over days. For conditioning days neither the Blocks effect ($F, 2.40$; $df, 3/30$; $p > .05$) nor the Days by Blocks interaction ($F, 1.08$; $df, 30/300$; $p > .20$) was significant. An analysis in which the Days variable was collapsed into days one through five and days six through ten (corresponding to the data presented in the insert) failed to reveal a significant Days by Blocks interaction for conditioning days ($F, 0.27$; $df, 3/30$; $p > .50$). However, a significant Days by Blocks interaction was obtained for extinction days ($F, 3.20$; $df, 3/30$; $p < .05$) indicating further, that reliable changes occurred in the form of the within session extinction function over days.

The observed decline in performance over extinction days and the increased initial steepness of the extinction function on later extinctions (i.e. the Days by Blocks interaction) are in accord with the discrimination hypothesis. However, in contrast with the striking changes observed in analogous instrumental conditioning situations (cf. Bullock & Smith, 1953), the extinction performance in the present study showed a remarkable degree of stability over repeated extinction sessions. Further, it is possible that the observed changes in

extinction performance over sessions might have resulted from the slightly decreasing level of performance over conditioning days. The failure of the Days by Conditions interaction to reach significance would be compatible with such an interpretation. Nevertheless, the results lend tentative support to the hypothesis that a discrimination between classical conditioning and extinction sessions can be established on the basis of the occurrence of the UCS on the preceding trial (s).

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Comment

Rosen & Ison (1965) rewarded three groups of rats with 400 licks of 20% sucrose, 400 of 3%, or 20 of 3%, then shifted all groups to the latter reward during the second stage of the experiment. In accounting for differences in running speed during the second stage, the authors examine two possible sources of variance: experimental treatment during the first stage, and lick rate observed during the second stage. They conclude that "... the correlations between licking rate and running speed, though of the moderate magnitude characteristic of these situations, do not account for a great percentage of the variance between Ss."

The correlations reported clearly support this conclusion, but it seems fair to ask how great a percentage is accountable to the experimental treatments given during Stage 1. The authors present no indices comparable to r^2 , such as ω^2 (Hays, 1963), and from the data reported the interested reader can not calculate such indices for himself. There is one exception. Considering response speeds on the last day of the second stage, the authors report a t-test comparing the two extreme treatment groups, 400-20% and 20-3%. The t value reported shows that treatment is responsible for

about 19% of the variance. It is difficult to compare this figure with variance accountable to lick rate, for two reasons. First, the correlation between lick rate and running speed on the last day is not reported. They do report a correlation based on all Ss, between lick rate and running speed during the whole of Stage 2, indicating that lick rate accounts for about 10% of the variance. Second, variance accountable to two extreme experimental treatments may not be strictly comparable to r^2 based upon all Ss. If we selected Ss with extremely high, and Ss with extremely low lick rates, r^2 based on these extreme groups could conceivably exceed .10 or even .19.

The predictive value of lick rate may indeed be moderate, but it is hard to tell from the data reported whether experimental treatment is better or worse in this regard.

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(For reply by Ison and Rosen, see page 100)