that the observed decrement was due to the interpolation of the A-C list. Although it is quite possible to maintain that any memory task in which more than one response is involved possesses some degree of response competition, the present recognition memory task may be said to minimize such competition. Therefore, the results of this study may be taken to indicate an unlearning effect in a relatively unambiguous situation.

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Comment

The most significant finding reported by Eileen B. Karsh (Punishment: effect on learning and resistance to extinction of discrete operant behavior. *Psychon. Sci.*, 1964, 1, 139-140) was that a group of Ss that received shock during food-reinforcement training showed greater "resistance to extinction" than a control group that did not have the shock during training. To support this claim the author cites a significant group-by-trial block interaction (during extinction). Since no mention was made of the overall difference in number of responses of the two groups (the main effect of groups), it must be assumed that it was not statistically significant. If this assumption is correct, serious objection may be raised regarding the conclusion based on the interaction mentioned above. Since the experimental group had received the shock during training, it is not surprising to note that their response level at the beginning of extinction was quite suppressed when compared to the level of responding of the control group at the beginning of extinction. It is not unreasonable, then, to discover that the groups appeared to drop in frequency of response at different rates during extinction. We cannot be certain that a difference in *resistance* to extinction was involved at all, since one of the groups was already at a relatively low level while the other had

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Notes

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"more room to drop" when extinction began.

One must question also the tendency to find significance in the linear component of the differences among more than two means, when no good reason, a priori or a posteriori, exists for examining this type of variation. It may be true that most of the variation due to shock intensity after 50 shock trials was associated with the "linear" degree of freedom (equal steps in the independent variable required but absent, notwithstanding), but what psychological sense does this "linear" variation make? Was it merely that no significance obtained when both df for shock intensity were tested together? This same point may be made again for the data of the second shock period. When we finally get to the extinction data, when a "meaningful" but possibly misinterpreted trend (across blocks of extinction trials) is available for testing, the author merely reports the whole 9 df interaction.

On the basis of these considerations, one would do well to assimilate these results cautiously into the body of psychological knowledge. Replication, with attention given to the foregoing comments, would appear to be called for.

H. D. Kimmel
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