Results

The most striking result was that animals seldom jumped the hurdle on those days when the start and safe box cues were reversed. This was true whether the change occurred on day 3 or day 4. An analysis of variance on day 3 for mean time to cross the hurdle for changed versus same environment groups yielded $F=394.53$, $df=1/28$, $p<.01$. For day 4 the same analysis gave $F=133.07$, $df=1/28$, $p<.01$. There was no significant difference between groups fear-conditioned under low stimulus-intensity and high stimulus-intensity. For day 3 $F=1.52$, $df=1/28$, $p=ns$; for day 4 $F=0.92$, $df=1/28$, $p=ns$.

There is habituation of the hurdle-jump on both days 3 and 4 for animals tested under the same condition. That is, the animals tend to slow down their escape times. An analysis of variance on escape times over trials for the "same-cue" condition for days 3 and 4 yields the following: The effect of days 3 vs. 4, $F=0.94$, $df=1/30$, ns ; for Trials, $F=4.025$, $df=9/270$, $p<.01$.

Discussion

These results suggest that the onset of fear is not a certain predictor of what an animal will actually do in a given situation. Observation of individual animals showed stretching and exploration and some attempts to push on the hurdle. Clearly the animals were active and agitated under the changed-cues conditions even though they did not cross the hurdle. Theoretical statements of the role of acquired fear must state what habits

will be activated by the fear. The habits appropriate to the situation may be independent of the fear and under control of the same or different stimuli. In the present study, animals did not hurdle-jump after fear-conditioning, when cues were changed; then when the cues were reinstituted, they did hurdle jump. Since their behavior is clearly stimulus bound, even though they appear agitated in both conditions, the instrumental behavior may be conceived to be independent of the fear-response.

Since the safe-box cues are also reversed, it is possible to conceive of the animals avoiding the fear-inducing cues of the safe box when they are reversed. In such an analysis, the failure to learn to jump the hurdle indicates that the fear-response does occur and that the behavior depends on the cues of the environment not on the presence of fear alone. Again, the two responses are seen to be independent.

References

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Note

1. Supported by N. I. H. Grant MH08740-01.

Comment on Atrens' "Vibration effect"¹

by Dale M. Atrens and Melvyn B. King

A study by Atrens (1966) reported that rats placed on a vibrating floor for 1 hr. lost a significantly ($p<.01$) greater amount of weight than control animals which were exposed to either 1 hr. of the sound accompanying vibration or were merely placed in the experimental chamber for 1 hr. with neither sound nor vibration. Since there were no significant differences among groups on the activity measure the author proposed a two-factor hypothesis to account for the weight losses. The first factor was a "real" vibration effect brought about by an induced increase in the rate of catabolism of the animals' fatty tissue. The second was a spurious effect resulting from intestinal and bladder evacuation due to the increased emotionality caused by this stressor stimulus.

To assess the value of the spurious effect and to increase the generality of the earlier data, the present authors replicated the original study in a new apparatus² with a more precisely specified physical stimulus while controlling for evacuation. A spectrographic analysis of the sound produced by the vibrating floor indicated the great majority of the recorded frequencies to be in the 1200-1300 cps range while the amplitude array indicated homogeneous displacements with the maximum total

excursion not exceeding 1/16 in. To control for the evacuation factor all 30 Ss were deprived of food and water for 24 hr. before the experimental session. The efficacy of this procedure is indicated by the fact that during the entire study E observed no urination and only a few bolusses. The pattern of percentage weight losses here was virtually identical to that obtained in the first study only this time they were uniformly reduced by 0.5%.

These data indicate that vibrated rats show a weight loss beyond that which can be accounted for by defecation and urination. However, this by no means contraindicates the possibility of a stress effect not unique to vibration. Just what proportion of the weight loss is due to a "real vibration effect" remains to be determined.

Reference

- Atrens, D. M. J. P. The effect of cutaneous vibration on weight loss. *Psychon. Sci.*, 1966, 4, 281-282.

Notes

1. Presented at SEPA, New Orleans, March, 1966.
2. Complete specifications of the apparatus will be provided on request.