LETTERS TO THE EDITOR

ANIMAL MODEL FOR INCREASED RETRIEVAL OF UNPLEASANT MEMORIES: FACT OR ARTEFACT?

Sir,

Kumar and Karanth (1999) describe their research which demonstrated that rats which received inescapable shocks appeared to recall noxious stimuli better than rats which received escapable shocks, or no shocks at all. The differences between groups of rats was not due to differences in basal motility in the open field. Since the administration of inescapable shocks is the basis of a learned helplessness animal model of depression, Kumar & Karanth suggested that their findings represented an animal model of increased retrieval of unpleasant memories, as occurs in depression.

Kumar and Karanth (1999) used passive avoidance tasks to demonstrate the putatively enhanced retrieval of unpleasant memories in inescapably shocked ('depressed') rats. However, behaviour in passive avoidance tasks...
LETTERS TO THE EDITOR

is confounded by state-dependent passivity, as might be expected in the depressed state. In other words, if the animal remains passive in a passive avoidance task, we do not know whether the prolonged latency to response is due to depression-associated passivity or to better recall of a noxious stimulus.

Thus, in passive avoidance tasks, passivity of the animal on account of depression related behaviour can falsely inflate task performance scores, and hence be misinterpreted as better recall. It is currently considered that in research involving learning and memory, such potential biases should be identified and eliminated at the level of the study design itself (Andrade et al., 2000). I therefore suggest that authors' point might have been more validly made had they used an active avoidance task to demonstrate that inescapable shocks improve the recall of noxious stimuli.

Finally, a healthy rat in a controlled environment is far removed from a dysfunctional human in a complex psychosocial milieu; therefore, generalization from laboratory to clinic should be made with caution, and only after artefactual influences have been eliminated through appropriate experimental designs (Andrade, 1995, Andrade et al., 2000).

REFERENCES

Andrade, C. (1995) Electroconvulsive therapy: methods and results of basic science research at NIMHANS. In, Methods in Biological Psychiatry Research. (Eds) Khanna, S., Channabasavanna, S.M. & Keshavan, M.S., pp 114-138. New Delhi: Tata McGraw Hill.

Andrade, C., Sudha, S. & Venkataraman, B.V. (2000) Herbal treatments for ECS-induced memory deficits: a review of research and a discussion on animal models. Journal of ECT (in press).

Kumar, K.B. & Karanth, K.S. (1999) Neuronal mechanisms of increased accessibility of unpleasant memories in helpless rats: a summary of present findings and implications.