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Alternating two spatial tasks in rats reduces the time taken for learning

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Allocentric spatial learning can be assessed using popular spontaneous alternation behavior (SAB) tested with T-maze and also using radial arm maze (RAM) tasks. But the SAB testing has been reported to have lack of validity as a measure of retention, especially when used as a measure of short term memory. A more complex dual alternated task was designed to clarify whether increasing novelty and alternation factors in a task will increase or decrease the short term and long term memory in rats. Rats were made to learn both T-maze spontaneous alternation task and RAM task alternatively. Another group of rats were made to learn both the task separately without any alternation. And control group of rats were assigned to learn only one type of task. It was found that the group of rats performing "alternated dual task" could acquire the tasks more easily than the control groups and non-alternated dual task groups. This enhancement of acquisition was associated only with the complex task (RAM task) among the dual tasks. Moreover their retention (memory) ability was very significantly enhanced for both the tasks in dual tasks. It can be concluded that, the principle of "alternated dual task" can be made use when a complex task has to be acquired and learned faster by rats; as alternation with simple task enhances the ability of rats to learn and memorize a complex task more efficiently.

Biography

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