In Search of the Engram

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Introduction

- Descartes’ earliest attempt to explain memory in terms of the action of the brain
- Henschen speculated concerning the location of single ideas or memories in single cell
- Published in 1950
- Conclusion of experiments performed over 30 years
Experiments

- Animals used: rats, monkeys, chimpanzees
- Experiments performed: conditional reaction, latch-box opening, choosing brightly lighted alley, maze problem
Experiments – conditional reaction
Single lesion in cortex
Relation between errors and cerebral damage

If a small amount of cortex is destroyed, 5-10%, the loss of habit may be scarcely detectable.

If large amounts, say 50% or more, are destroyed, the habit is completely lost.

The amount of loss, measured in terms of the practice required for relearning, is, on the average closely proportional to the amount of tissue destroyed.
Conclusion

- Any lesion in single part of cortex did not produce a loss of memory - The Equipotentiality Principle
- the reduction in learning is proportional to the amount of brain damage - The Mass Action Principle