

Electric Brain
The Discoveries, Latest Research, and Future Implications of
Brainwaves

by

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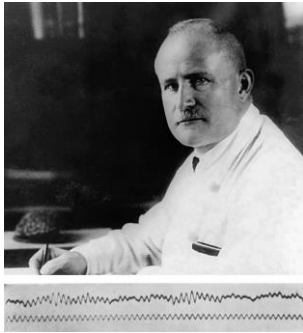
Mid-Atlantic Biofeedback Society, September 26, 2020

Lecture Notes

Part I The Discovery of Brainwaves

Questions:

1. How were brainwaves discovered and who made that remarkable discovery?
2. What motivated him?
3. What did he think he discovered?
4. What were the reactions of his fellow scientists?
5. Nazis and the death of two brainwave pioneers



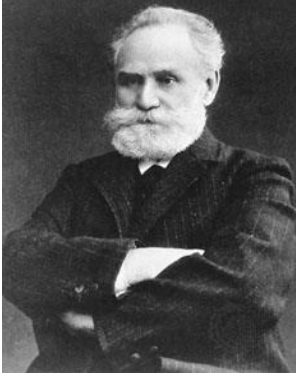
Hans Berger, 1873-1941



Angelo Mosso, 1847-1910



Adolf Beck, 1891



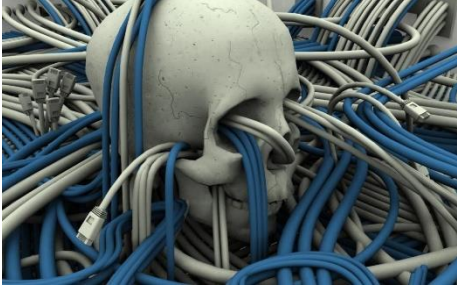
Ivan Pavlov, 1914



Richard Caton, 1875

Part II The Latest Research

1. Science and Science fiction about brainwaves



Hacking your brain: Know what you are thinking, can tell what your brain can do well or poorly, can predict what you will do, meld mind and machine

Mind-to-mind transmission, Mind control by electrical stimulation, Mind reading

2. What brainwaves do, if anything, is at the forefront of neuroscience and controversial

New research by

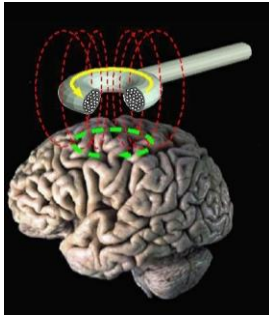
Howard Poizner

Chantel Prat

Marcel Just

3. Brainwaves in diagnosis and treatment

4. Manipulating brainwaves



Deep brain stimulation, electrode arrays, TMS, tDCS, neurofeedback, rhythmic stimulation

Part III Future Directions

1. Brain-computer interface technology

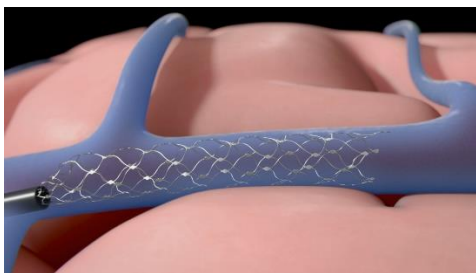


2. New methods to monitor and manipulate electrical activity in the brain

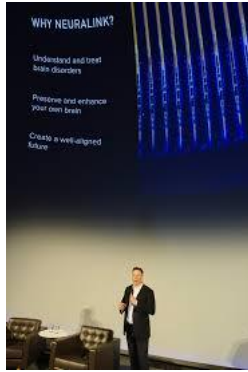
Thomas Reardon and wrist band interface



Thomas Oxley and the Stentrode

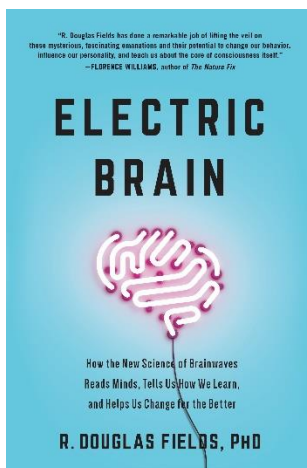


Elon Musk and Neuralink



3. Ethical, technical, and practical issues.

For more information and references to the literature see:



Electric Brain, published 2020 by BenBella press <http://rdouglasfields.com>