

Overview

11 papers mailed in WORD format monday midnight

1 Book review (in lieu of Final)

1 Group lab report

Thurs nanoquizes

What is cheating?

Book manuscript: user = neuroscientist

Papers

Either positive(N&V) or negative(BBS) or neutral(NYT Book Review)

Grades

Spelling(1),grammar(1),style(1),arguments(4), extra(1)

Assugnment 1: Computation <http://www.transhumanist.com/volume1/moravec.htm>

Choose one of:

Ramachandran, V.S. and S. Blakeslee, *Phantoms in the Brain: Probing the Mysteries of the Human Mind*

Geoffrey Miller, *The Mating Mind*

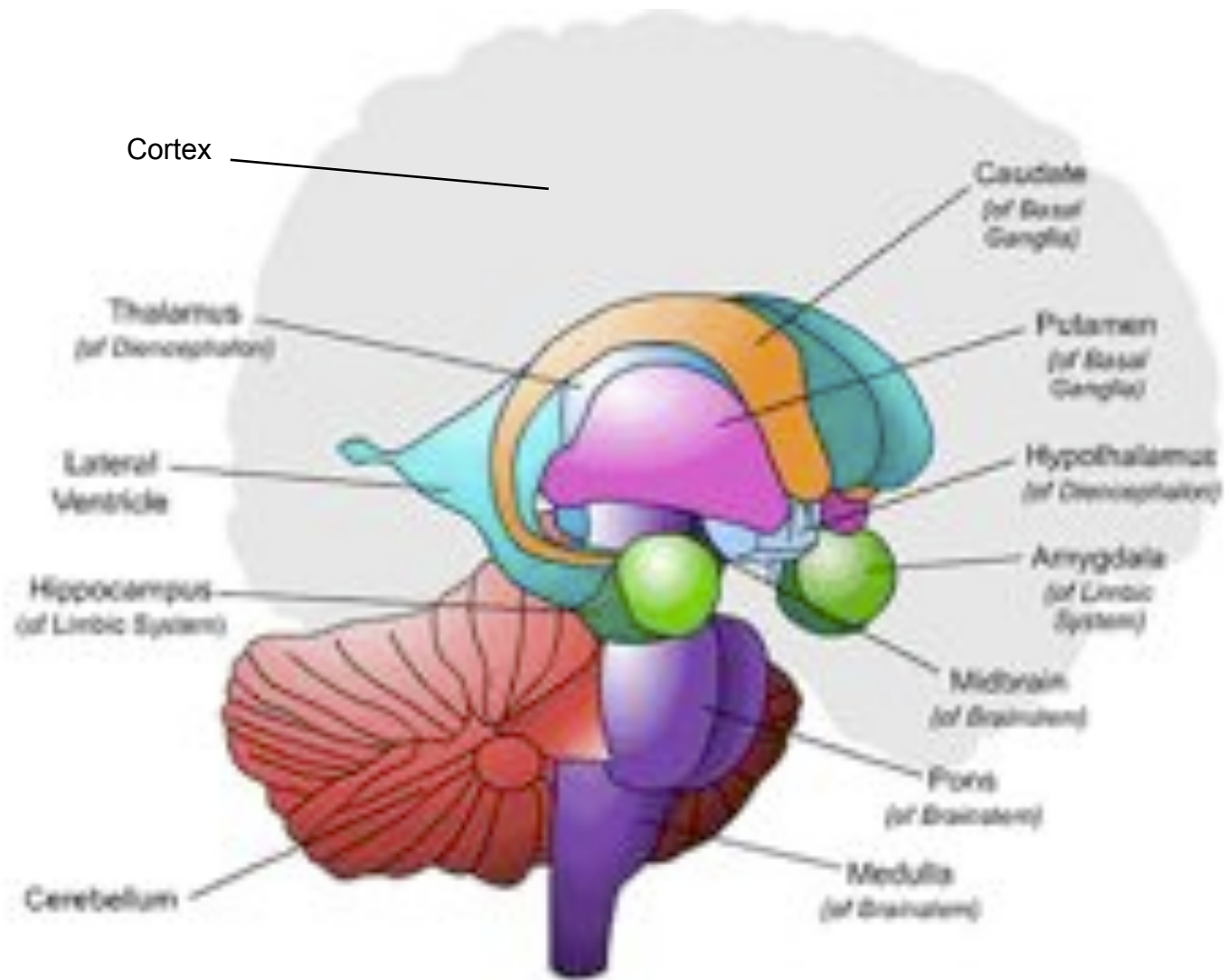
Wegner, D.M., *The Illusion of Conscious Will*

Graziano, MSA (September 2010) *God, Soul, Mind, Brain: A Neuroscientist's Reflections on the Spirit World*

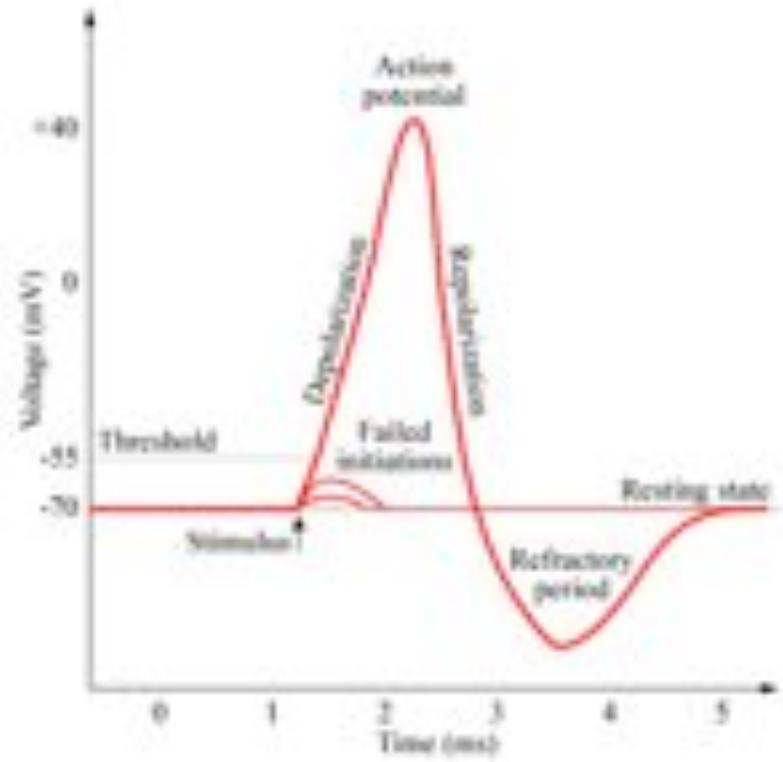
Computation with slow circuitry

Feature	Value
Number of neurons	10^{11}
Ave. no. connections per neuron	10^4
Total connections	10^{15}
Speed of communication	10 meters/sec
Average signaling rate	10 voltage spikes/sec
Sum of all axonal lengths	10^6 km

Major Brain Components

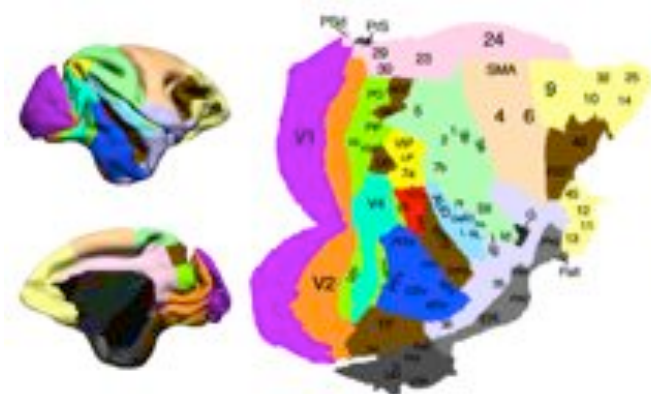


Neurons: inputs, outputs & circuits

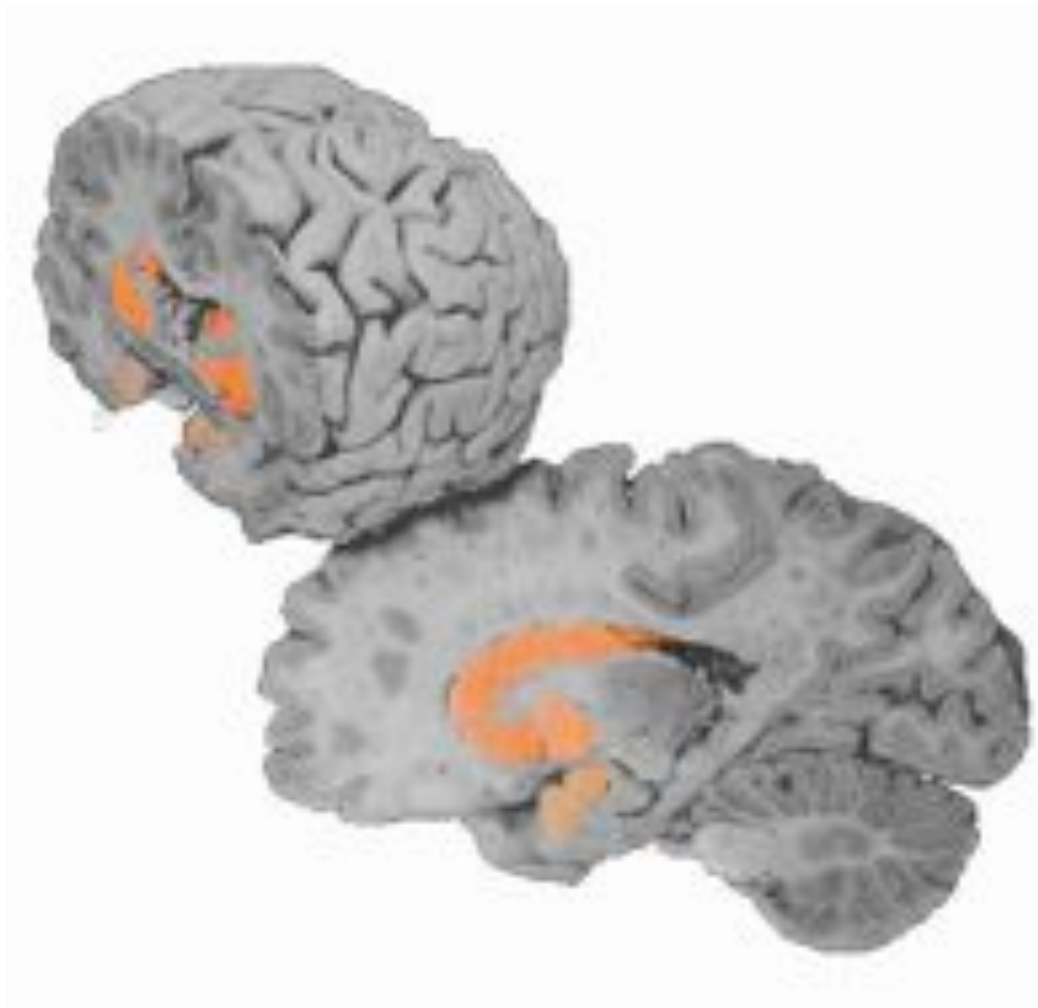


Cortex: Memory

Flattened Representation of Monkey Cerebral Cortex
Van Essen and Drury 1990



Basal Ganglia: Processor

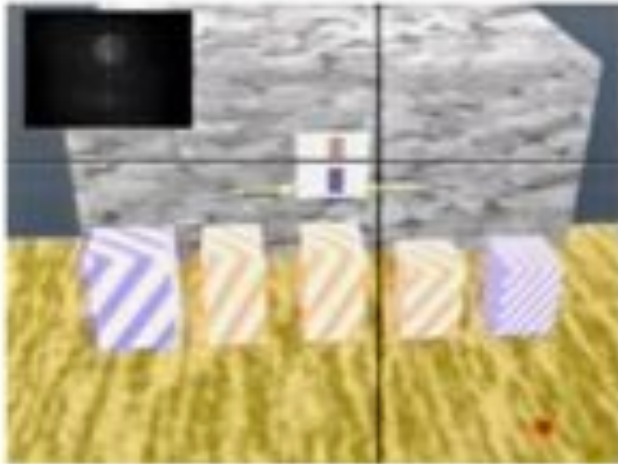


9/27 Experiments

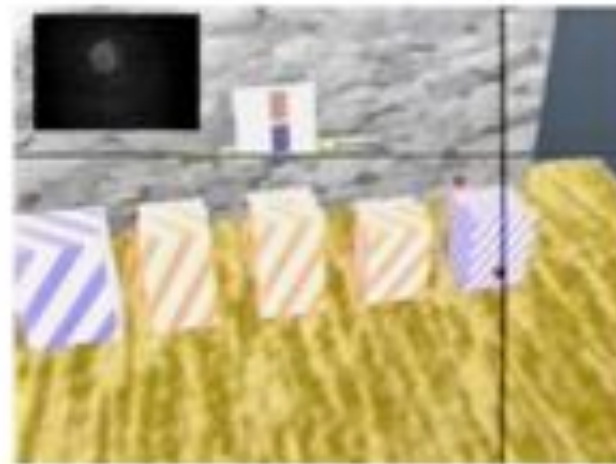


10/4 Presentations

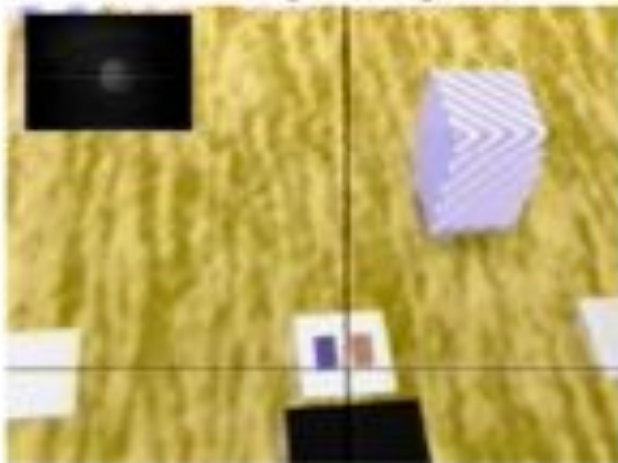
Input & Output



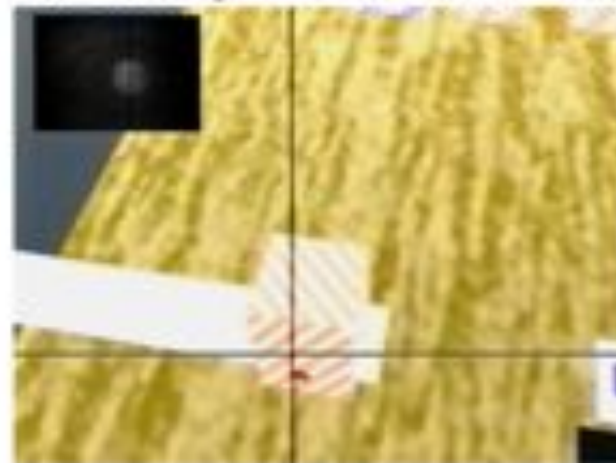
A. Read pick up cue



B. Pickup the virtual block



C. Read put down cue



D. Put down the virtual block

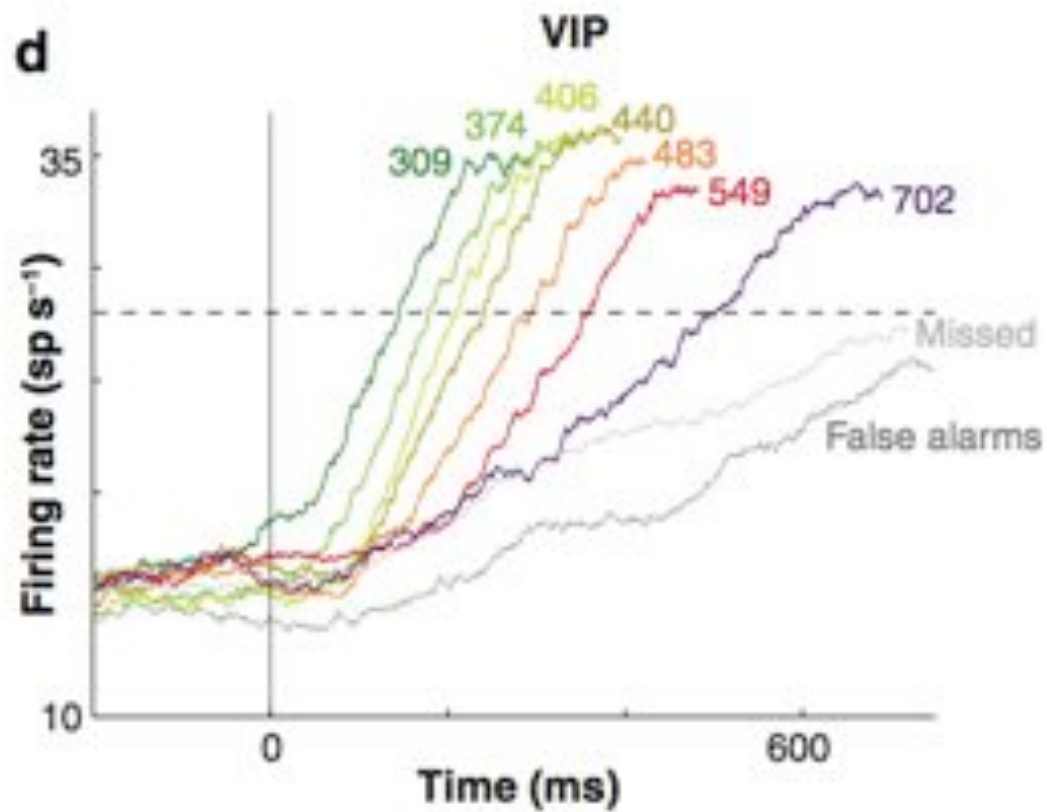
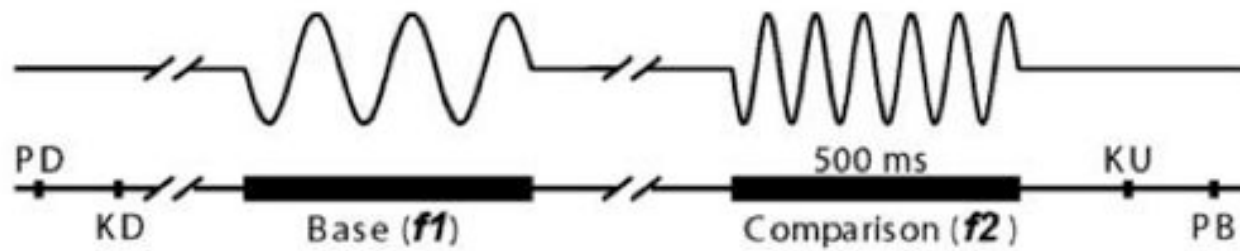
Operating System



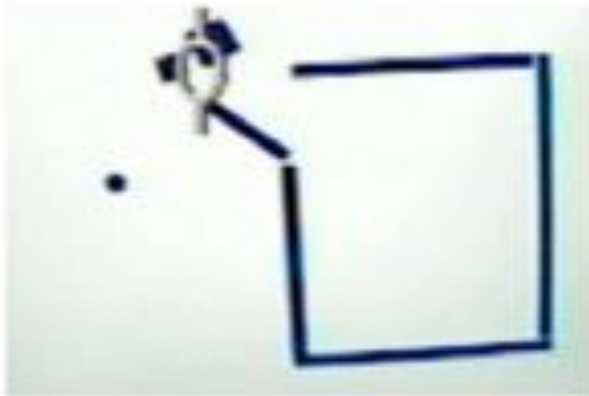
Emotions



Decision Making



Consciousness



"The Big Square (BS) confronts the Little Square (LS)"



"The BS chases the Little Circle (LC) into the house and confronts him"



"The LC runs out of the house and the LS shuts the door behind them"



"The BS is moving very fast; he's chasing them"

Book Review

Big brains via sexual selection?

