Physiological Psychology: A Rap

By

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Intro to Physio Psych

Physio psych is
Very complex
So here I come
With a lyrical mix
Components of a Neuron

Neurons are
The basis of behavior
Billions control
Things minor and major
Sensory, motor and interneurons

Three types of neurons
It is said
They work together
Not all in your head!
Part of Neuron

Every neuron has
Three main parts
Working together
like pieces of art

The cell body
has a nucleus
Dendrites and axons
Are a must

To carry information
From here to there
So we can hear
What’s in the air
The Synapse

Nerve cells are Separated
By little gaps
The fancy name
is the synapse
Synaptic Transmission

Where Neurotransmitters Come In several classes
They use chemicals And some use gases
Drugs can be Antagonistic
This is how People get addicted
To alcohol, nicotine
And cocaine
The drugs’ effects
Are in the brain.
Dopamine though is a pretty cool substance ...
... too much or too little can make you a real dunce
The Human Nervous System

The nervous system
Comes in two parts
Central and Peripheral
Are just for a start

The CNS is
the spinal cord and brain
signals go back and forth
kinda like a train

The Peripheral System
Is conscious and not
Some we control and
Some we can not
Sympathetic & Parasympathetic Systems

The sympathetic side
Is for fight or flight
When danger lurks
Our muscles have more might

The Parasympathetic
Helps us to make
A return of our body
To its resting state
The Human Nervous System

In many respects these Systems are opposite But together they make a composite

They even control our Sexuality ...
But too much stress
→ psycho-therapy
The brain itself
Has a lot of parts ....
The brain’s major divisions

... 

Forebrain, midbrain
And hindbrain for a start
Hindbrain

Medulla oblongata
And reticular formation
Help control sleep
And bodily regulation
The cerebellum is for motor skills...
... The forebrain is The site of free will
The cerebral cortex
Is where we do our thinking
It gets messed up
From too much drinking
The hypothalamus is
A very small structure
But we need it for
A lot of behavior*

The pituitary,
hippocampus
And amygdala
Each have a role to play
Like basal ganglia

*The hypothalamus is related to the Four F’s of behavior: feeding, fighting, fleeing and mating!
Left & right hemispheres & the corpus callosum

The corpus callosum
Cuts the brain in halves
This way left and right
Have different tasks
Split brain research

Left and right hemispheres
Play different roles
Cutting the callosum
Makes information holes
Broca and Wernike looked at human speech. So the left hemisphere is most fit to teach.
Lobes of the brain

The hemispheres have
Four areas or lobes
Somatosensory cortex

... Sensation/perception
And motor controls
The brain is the product of human evolution. It came to be by cell mutation.
Genes and environment
Are interconnected
Just like people
Are interrelated
DNA & the double helix

DNA
Makes a double helix
mothers and fathers
both add to the mix
Sometimes twins
Are identical ....
.... Other times
Only fraternal
(But) Studies of twins can tell us a lot. Nature and nurture is what its all about.
A damaged brain can give us information like what controls language comprehension.
Phineas Gage’s brain injury (schematic)

A metal rod pierced the Brain of Phineas Gage
After the accident
He had fits of rage*

*Showed the influence of the frontal lobe on personality
Studying the brain
takes several tracks
like watching the brain
doing different tasks
EEG: Electroencephalogram

The EEG Records Brain waves
You can see thinking
Or sitting in a daze
CT: Computer Axial Tomography & MRI

CT Scans and The MRI Expose the brain To the naked eye
But Most impressive are Functional-(imaging) techniques*
These technologies Are really very neat

*PET (Positron Emission Tomography) and fMRI (functional Magnetic Resonance Imaging)
PET: Positron Emission Tomography

They give a view
Of the living brain
While listening to music
Or the patter of rain.
The last thing I’ll say
Is about brain death*
If I’m a vegetable
See if I have breath

If I am breathing
Keep me on the machine
Let’s Keep hope alive
You know what I mean?

*The chapter concluded with a discussion of the moral and ethical dilemmas facing Terry Schiavo’s family
So there it is
Physio in a nutshell
I’m done – I’m out
I’m professor Hal!