# ANEURAL BRAINS

"Not all living things have physical brains."

In this chapter, we delve into alternative methods for storing and processing information independently of the physical brain. By examining both Aneural and Neural memory networks, we aim to uncover the intricacies of non-brain-based cognition. Additionally, we conduct thought-provoking brain experiments that challenge the conventional notion that all cognitive processes occur exclusively within the brain.

## — INTUITIVE ANEURAL NETWORKS

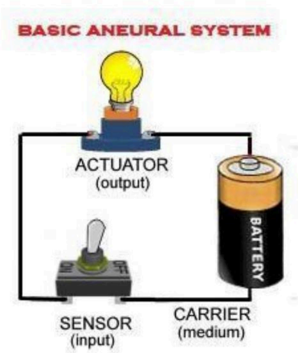


Figure 4.1

Figure 4.1 illustrates a system composed of essential components: the switch, wire, bulb, and battery. These elements collectively form the material foundation of the system. Let's break down their roles:

1. Switch: As the collector, the switch allows the entry of input signals.
2. Wire: Serving as the carrier, the wire facilitates the flow of the medium.
3. Light Bulb: The actuator, represented by the light bulb, releases the system's output.
4. Battery: The energy source that animates the entire system.

The switch, seemingly intuitive in design, harbors embedded instructions. It stores two fundamental pieces of information: ON (activating the bulb) and OFF (deactivating the bulb). Similarly, the wire and the bulb also retain dual information.

These binary instructions—whether expressed as 0 and 1, Negative and Positive, Dit and Dah, or other symbolic representations—constitute the core of every system. When the system is ON, it operates; when OFF, it remains idle.

Upon introducing a signal into the main system, a cascade of instructions activates within the secondary or sub-systems. Each stored instruction energizes independently. Consequently, the system produces a result. Conversely, when the main system is OFF, all subsystem instructions remain dormant, resulting in no processing or output.

For example, the embedded instructions of the wire are to let electricity flow or not to the bulb. The embedded instructions of the bulb are to give light or not. Information and instructions are stored and processed without the help of neurons or the brain. This non-mental memory system is called a Aneural System.

When information is embedded in a non-mental or aneural system, the memory system is an Intuitive Aneural Network. IAN is a non-neural system where information is stored and processed without the presence of the brain.

Other examples of Intuitive Aneural Networks:

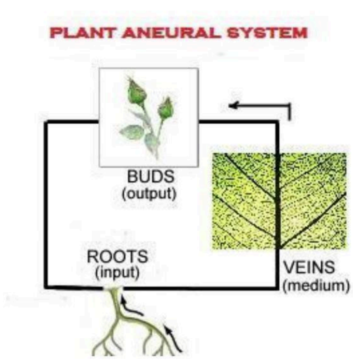


Figure 4.2

1. Plant Systems

In the intricate network of plants, information is stored and transmitted without the need for a central brain. Consider the following components:

- Veins on Leaves and Stems: These vascular structures serve as the plant's intuitive aneural network. They transport nutrients, water, and signals throughout the plant, allowing it to respond to environmental cues. Remarkably, plants exhibit complex behaviors such as phototropism (bending toward light) and gravitropism (root growth in response to gravity) without possessing a brain.

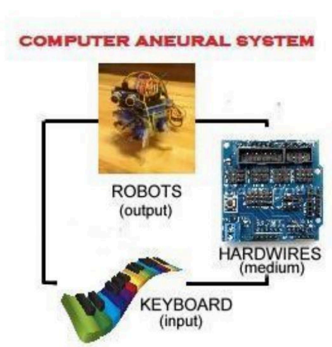


Figure 4.3

2. Computer Systems

Our modern digital world relies heavily on intuitive aneural networks within computer systems. Key components include:

- Hardwires: These physical connections within computer hardware facilitate data transfer. Whether it’s a copper wire or an optical fiber, hardwires transmit information without neural involvement.
- Transmitters and Receivers on the Motherboard: These components enable communication between different parts of the computer. They function seamlessly, processing data without any neural circuitry.
- Softwires on Atmospheric Channels: In the realm of wireless communication, softwires (such as radio waves) carry information across the airwaves. These signals propagate without the need for neurons or brains.

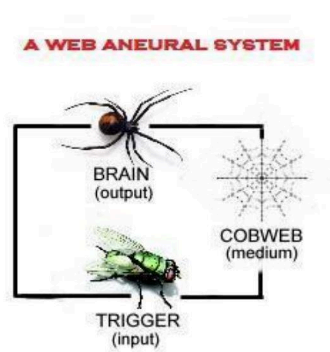


Figure 4.4

3. CoNNeC: The Cobweb aNeural Network Connection

CoNNeC exemplifies an unconventional IAN system. Imagine a spider's web—a delicate yet efficient structure. Here's how it works:

- The Fly (Trigger): When a fly lands on the web, it disrupts the threads, sending signals throughout the web.
- The Spider (Output): The spider, positioned at the center, senses these vibrations and responds swiftly.
- Web Mediums and Carriers: The silk threads of the web act as mediums, transmitting information across distances. The web itself becomes a linear non-mental memory network system.

CoNNeC demonstrates that information need not rely solely on neural pathways. Instead, it flows through natural or synthetic channels, creating intricate networks beyond the confines of brains.

4. Aneural Creatures

Moreover, consider the myriad creatures that thrive without brains. From simple organisms like jellyfish and sea anemones to more complex beings like starfish and flatworms, these aneural organisms navigate their environments, process stimuli, and survive—all without neural circuitry. Their existence serves as compelling evidence that the brain is not the exclusive repository of information.

5. Mother Nature

Finally, according to Originemology, the original source of all information is Mother Nature. Plants, animals, objects, and all other non-living and living things are pieces of information. Nature is the keeper, database, and storage of all this information. She has no physical brain but she contains lots of inherent information.

**— NEURAL NETWORK SYSTEM**

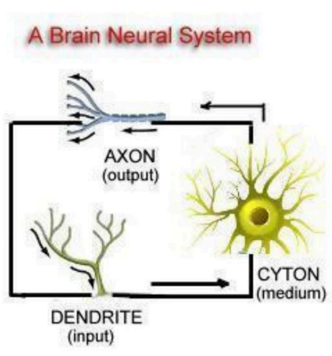


Figure 4.5

The Neural Network System is a fundamental memory network that operates within the intuitive system known as the nervous system. This intricate network comprises essential components, including the Brain and the Spinal Cord:

1. Brain: The brain serves as the central hub for information processing. It is where complex cognitive functions, memory consolidation, and decision-making occur.
2. Spinal Cord: The spinal cord acts as a distribution center, relaying information between the brain and the rest of the body. While the brain processes information, the spinal cord ensures efficient communication throughout the nervous system.

Neurons are the building blocks of the brain. These remarkable cells are aneural, meaning they lack neural properties. Let's explore their structure and function:

1. Cell Body (Soma): The cell body contains the nucleus and other essential organelles. It resembles a hub with several branches called dendrites.
2. Dendrites: These dendritic branches receive incoming signals from other neurons. Motor neurons, for instance, have thick dendrites that carry nerve impulses toward the cell body.
3. Axons: Axons are long, thin fibers that extend from the cell body. They transmit nerve impulses away from the cell body to other neurons or tissues.

Neurons exhibit diversity based on their structures and functions:

- Multipolar Neurons: Common in the brain and spinal cord, these neurons have multiple dendrites and a single axon.
- Bipolar Neurons: Found in specialized sensory areas (e.g., the retina and inner ear), bipolar neurons have two processes—one dendrite and one axon.
- Unipolar Neurons: These neurons are primarily located in the spinal cord. They have a single process that splits into both dendritic and axonal branches.

Remarkably, brain cells have a lifetime existence. Unlike other cells with finite lifespans, such as blood cells, brain cells endure throughout an individual's life. For instance:

- White Blood Cells: Live for approximately 360+ days.
- Platelets: Survive for about 10 days.
- Bone Cells: Persist for 25-30 years.
- Skin Cells: Renew every 19-34 days.
- Stomach Cells: Replace themselves every 2 days.
- Sperm Cells: Last 2-3 days.

Neurons don’t limit their activities to the brain alone but also in the other parts of the body. Multipolar neurons are common in the brain and spinal cord. Bipolar neurons are found in the retina of the eye, the inner ear, and the olfactory (smell) area. Unipolar neurons are found in the spinal cord. In the neuron system, signals are received by the dendrites, processed by the cell body, and transmitted as output into the axons. Take note that all these activities are happening individually among neurons without the assistance of the brain.

Neurons are the essential memory units in the neural system. While, Gnos, or aneural neurons, play crucial roles in the aneural system.

Neurons are widely considered to be the major determinant of mental functions and behaviors. More neurons mean a larger brain. The bigger the brain, the highly intelligent the creature.

A sponge, for example, has a zero number of neurons. This creature does not have a brain nor a spinal cord, yet it is a living creature. Elephants have 267 billion neurons. This means these animals have larger brains and intelligence. Octopuses, on the other hand, have neurons in both their brains and tentacles. This tells us that their feet function also as brains.

Here are other examples of animals with their respective number of neurons:

Sponge – 0

Roundworm – 302

Jellyfish – 8k

Leech – 10k

Pond snail – 11k

Sea slug – 18k

Fruit fly – 250k

Ant – 250k

Lobster – 100k

Honeybee – 960k

Cockroach – 1M

Frog – 16M

Mouse – 70M

Pigeon – 310M

Octopus – 500M

Dog – 2b

Monkey – 30b

Human – 85b

Elephant – 250b

Here are also some amazing examples of tiny brains that have small number of neurons but can plan and build super complex structures:

1. Tiny Pufferfish and Their “Crop Circles”

   These seemingly unassuming creatures demonstrate an astonishing talent for design. Using only their fins, they meticulously create intricate patterns on the seabed—often referred to as “crop circles.” These formations serve multiple purposes: attracting mates, providing shelter, and perhaps even signaling territorial boundaries. Not content with mere circles, pufferfish also decorate their sand constructions with shells, showcasing an aesthetic sensibility that defies their small brains.

2. Ant Colonies: Masters of Complexity

   These social insects are true marvels of organization. Their colonies exhibit super complex structures:

   - Air-Conditioning: Ants regulate temperature within their nests by strategically moving between warm and cool areas.
   - Waste Disposal: Ants maintain separate chambers for waste, ensuring cleanliness.

- Social Orders: Ants divide labor efficiently, with specialized roles for workers, soldiers, and queens.

3. Birds and Their Hexagonal Nests

   Avian architects create intricate nests, often with hexagonal patterns. These nests are meticulously constructed to house offspring. Remarkably, the number of nests is counted ahead of time, ensuring each offspring has a place. Birds exhibit planning and foresight in their nest-building endeavors.

4. Spiders and Silk Artistry

   These arachnids spin silk into intricate patterns on their webs. The silk serves multiple functions: capturing prey, providing shelter, and even communicating with potential mates. Their ability to construct complex geometric designs is awe-inspiring.

5. Sow Bugs (Pill Bugs):

   Despite their tiny brains, these terrestrial crustaceans have managed to navigate across continents—from Alaska, Europe, Asia, Africa, Australia, to Americas with their tiny brains.

If these tiny brains could plan and build complex designs, where and how did these small creatures learn their skills? Where did they copy such behaviors? Could they conceptualize, visualize, or imagine? If they could build a complex structure or plan an intricate pattern, did they start from a simple design? What was it? Could they reason and recognize with their own thoughts?

The ability to recognize one's own thoughts is known as Metacognition. It resides in a region of the brain called the prefrontal cortex that stores various cognitive functions such as planning and reasoning. It is credited to be the common factor that distinguishes humans from other species. This idea of course is debunked by the Codexation Dilemma.

## — A BRAIN W/O THE BRAIN

Aside from the various types of aneural experiments outlined here, another experiment known as the Mirror Equation provides proof that objects can store and process information without the help of the physical mind. The precept of “A brain without the Brain” is possible.

In this experiment, an inverted colorful background picture is projected on the surface of a wall using a hole poke at the center of a cardboard.  The "selfie" image on the wall is created by the mathematical kinematics of the rays of the sun via the magical power of the mirror equation. The vivid picture is not painted nor programmed by anyone. There are neither sensors nor actuators in place, nor even a brain to store and process the whole detailed image. The vibrant picture simply emerges because of these three things: a mathematical equation, a pinhole, and light rays.

In another recent study, a mirror was used to find answers to the following questions: What do infants see when they see themselves in a mirror? Do they perceive themselves or do they perceive someone else at the back of the mirror? What is it that makes one recognize oneself in the mirror? Do dogs and other animals see themselves in the mirror too? Based on this study, although these infants and animals have brains, their brains cannot process and recognize such information in the mirror at an early age.

Furthermore, plants interact with light without knowing what light is. Other objects such as the device sonar detects or interacts with sounds without knowing what is sound. Power supplies also automatically detect electrical lines if it is 220v or 110v without knowing what voltages are. These devices can also decide by themselves without the interventions of a computer program or of a physical brain. All these examples suggest that one does not need a physical brain to make decisions or logical choices. A brain doesn't need The brain!

## — BRAIN EXPERIMENTS

As I was working on my B2W experiments on voice to text conversion and voice recognition, I was also developing at the same time a game app for my grandnephew EJ. The app was called "Smash the Bugs". It was a game about smashing as many bugs as you could to score more points. The app, when played on tablets or phones, sounded off the word "HIT" every time a bug (spider, butterfly, ants) was smashed.

What was interesting about this app was that I discovered the Brain has its Own Mind. The mind can choose what it wants to think and do much like how our biological sensors can choose what signals to pick based on the affinity of their designs. The HIT or KICK Episode is so remarkably interesting because it reveals that the mind has the capability to control itself even if the owner of the brain is in a conscious state.

To try this experiment, first upload the app on my website and then follow the instructions below:

1: Attentively listen to the word “HIT” as you continue smashing bugs.
2: Focus your attention on the word “HIT” during gameplay.
3: After several minutes, deliberately think of the word “KICK.”
4: Replace the mental word “KICK” with “HIT” as you hear it in the game.
5: Observe how the word “HIT” begins to transform into “KICK.”
6: At this moment, your brain is actively replacing “HIT” with “KICK.”
7: After a few more minutes, notice that the word “KICK” now resonates mentally.
8: Your ears hear “HIT,” but your brain insists on “KICK.”
9: Attempt to switch the mental word back to “HIT.”
10: Surprisingly, you find that you cannot reverse the two words anymore. Your mind has taken control, and the switch is locked.

The mind is now in control over your “other brain”. Even if you try to replace or bring back the word HIT mentally, the mind will not allow you to switch it anymore. The mind is totally stuck! The mind needs to reboot.

This brief thought episode, which I aptly called the Brain Priority Phenomenon, reveals that our brain has the ability to prioritize which inputs and outputs must go first to our sensory organs. The brain always processes what it wants to do before it processes what we want to do. It also sends information systematically through our eyes, ears, nose, mouth, and touch — in this order.

Our thoughts when in overdrive sometimes mess up things what we perceive: seeing, feeling, hearing, tasting, smelling, balancing, and thinking. Sometimes what we say influences what we hear and sometimes what we see changes what we hear. Even more, sometimes what we think changes what we hear. This simple experiment suggests that our senses are triggered individually and not collectively.

"Cogito Ergo Sum" is a Latin phrase coined by Rene Descartes. It translates into "I think, therefore I am". The clause simply tells us that the very act of thinking, which demonstrates the reality of our existence and consciousness, emanates from the brain. However, there are some organisms, like plants, bacteria, viruses, and sea creatures, that are alive and conscious but without the physical brains.

There are also some people, known as synesthetes, who can taste colors, see colors by tasting, see by hearing, smell by touching, taste by hearing, and even smell sounds. These extraordinary experiences reveal that our senses may be interchangeable such as the way ears are utilized for seeing, nose for tasting, and skin for hearing. But these don't mean that the structures and mechanisms of their biological sensors have changed.

Besides, since everything evolves, our biological sensors might have evolved from the largest sensor in our body, the skin. Sooner or later, it evolves gradually into a handful of internal and external biological sensors like the hands (for touching), eyes (seeing), mouth (tasting), ears (hearing), nose (smelling), and brain (information processing).

If the skin was the first sensor to form, could it be where information was actually processed first through the sensation of touch?

Here is a list of random animals with their distinct skin surface areas. Arrange them in order such as the animal with the larger skin is placed on top and smaller skin is placed at the bottom:

1. Elephants

2. Humans

3. Orangutans

4. Octopuses

5. Worms

6. Beavers

7. Whales

8. Ants

9. Owls

10. Bees

11. Plants

12. Trees

13. Dogs

14. Corals

15. Spiders

16. Amoeba

17. Bacterias

18. Butterflies

19. Neurons

20. Hydras

Here are also some intriguing brain experiments that reveal your feet, your fingers, and other parts of your body can outsmart your brain:

A. Outsmart Your Foot

1. While sitting at your desk, lift your right foot off the floor as it makes clockwise circles.
2. As you do this, imagine drawing the number “6” in the air with your right hand.

Fun Fact: Despite your intentions, your foot will likely change direction and start moving counterclockwise. Your brain struggles to simultaneously manage the conflicting instructions, resulting in an unexpected outcome.

B. Outsmart Your Ring Finger

1. Spread your five fingers widely on a table.
2. Bend your middle finger with the knuckle firmly seated on the table.
3. Wiggle your thumb, then the index finger, and finally the pinky.
4. Now, focus on your ring finger and attempt to wiggle it.

Fun Fact: Surprisingly, your ring finger will remain stubbornly still. Your brain’s control over this particular finger seems to falter, leading to this curious phenomenon.

C. The Phantom Hand Experiment

1. Ask someone to hide their left hand behind a divider.
2. Place a rubber hand next to the divider in front of their body.
3. With a small brush, gently stroke both the rubber hand and the hidden hand simultaneously.
4. After a while, simulate stabbing the fake rubber hand with a screwdriver.

Fun Fact: Most people will react as if their real hand was actually stabbed. The brain perceives the rubber hand as part of their own body, demonstrating the fascinating plasticity of body representation.

Final Thought: Brain and Emotions

While we often think that feelings and emotions are associated with the heart, we also believe that thinking, or thoughts,— is intricately linked to the brain.

In summary, the world teems with intuitive aneural networks, showcasing the remarkable diversity of memory systems that operate independently of neurons. As we unravel these mysteries, we redefine our understanding of cognition and memory beyond the traditional confines of the brain.

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Intuitive Aneural Network, A Brain Without The Brain, Aneural and Neural Brains, Metacognition, Brain Experiments, Gnos, Gnomi, Joey Lawsin..

**Comments:**
This chapter is part of the book Originemology by Joey Lawsin.