

Information as Meaning Ascribed to Symbols

Is Information a Knowledgeable and Skillful Agent
with Intent and Causal Power?

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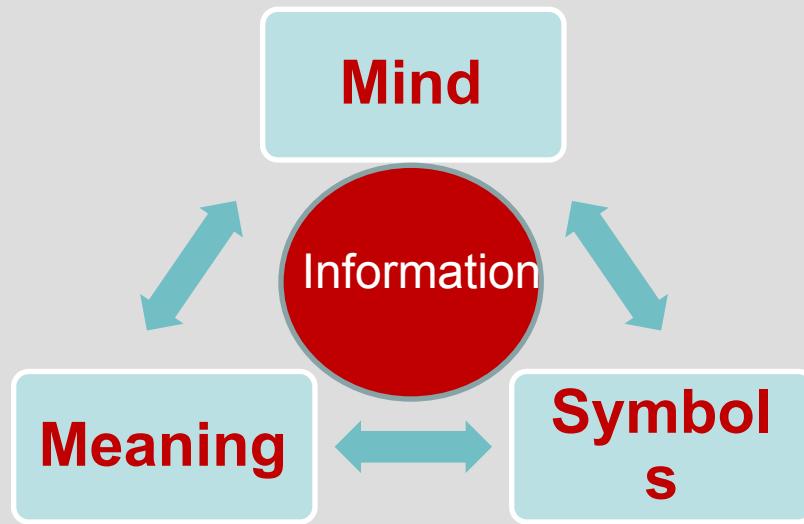
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Information and knowledge;
Symbols and meaning

Information and knowledge: An overview

The essence of both knowledge and information is meaning

- **Information** is meaning that is represented by physical **symbols** such as sights, sounds, and words that can be perceived via the five senses.
- **Knowledge** is meaning that resides in the conscious mind.
- There cannot be knowledge **without consciousness** since we cannot claim knowledge of anything unless we are aware it.
- **Symbols of information** are the media of representation and the means of transmission of information.
- Without meaning, mere symbols of information have no significance since meaning is an ascribed quality, not an inherent property of symbols.
- Information exists only when the **symbols** of information interact with a conscious mind.
- Anything we observe or interact with physically or mentally can be a **source** of information.
- Without a **common protocol or convention** between the symbols and meanings, we cannot transmit meaning from **one mind to another**.
- A concise and cohesive framework for information can be established only on the common platform of **mind, meaning, and symbols** trio.



Information vs. Knowledge: The interconnection

Can robots have knowledge?
Do plants have knowledge (such as photosynthesis)?

- **Information:** meaning represented by physical symbols such as sights, sounds, and words which can be perceived via the five senses.
- **Knowledge:** meaning that resides in the mind (thus there can be no knowledge without the mind.)

Information = Meaning ascribed to symbols (external)

Knowledge = Meaning that resides in conscious minds (internal)

- **Knowledge** is intimately associated with a **mind** that knows; and knows that it knows.
- As such, **entities that have no conscious mind** – like robots, smart phones, and plants – do not and cannot have any knowledge.
- Knowledge cannot be perceived or retrieved by outsiders, but information can.
- In **information**, meaning is **ascribed by a conscious mind to a physical symbol**.
- Therefore, **knowledge becomes information** when it is represented by a symbol which is comprehensible by others.



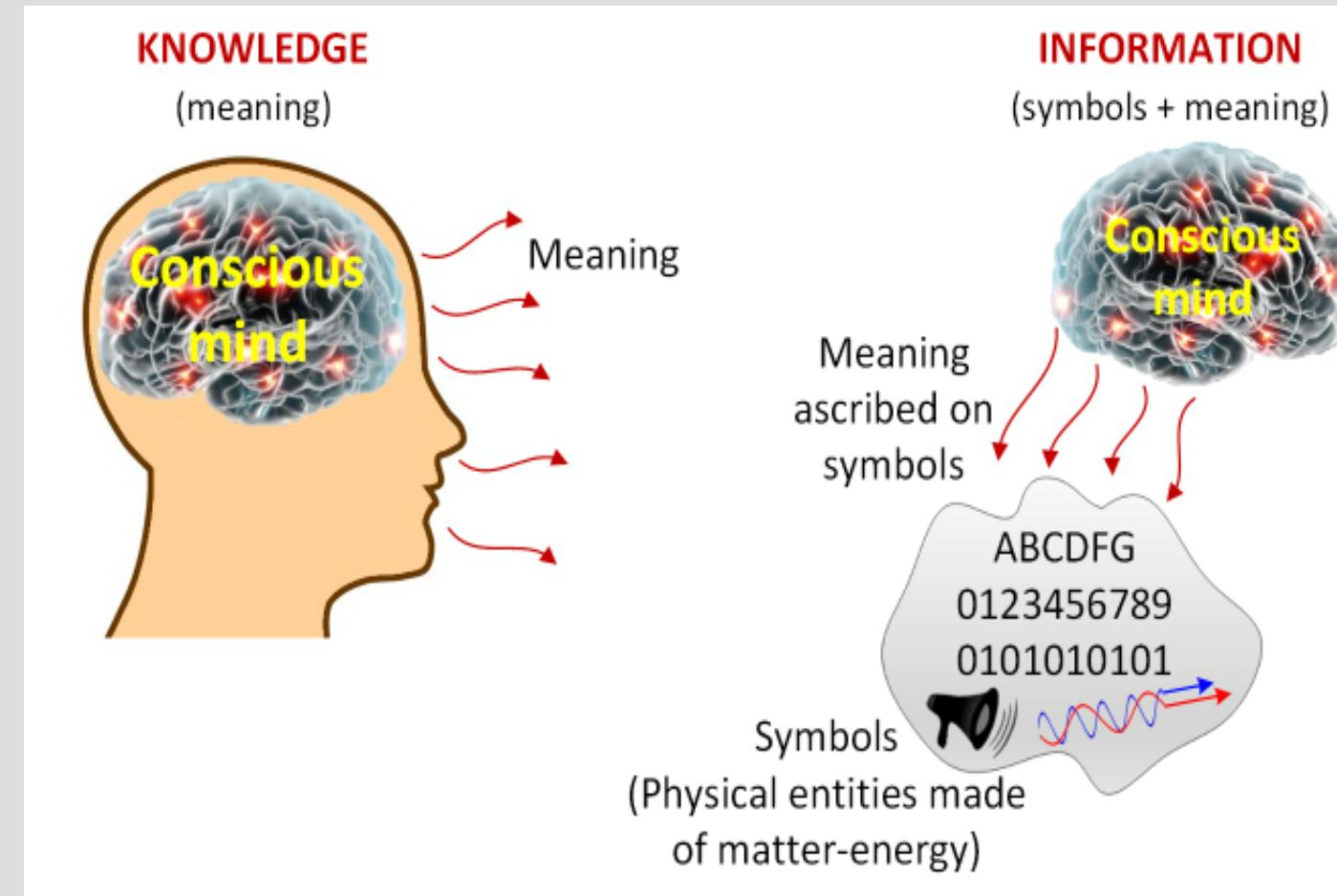
A humanoid (Erica) and a human

They look the same, act the same, talk the same; but are NOT the same.

Knowledge = Meaning in the mind

Information = Symbols + meaning (ascribed by a mind)

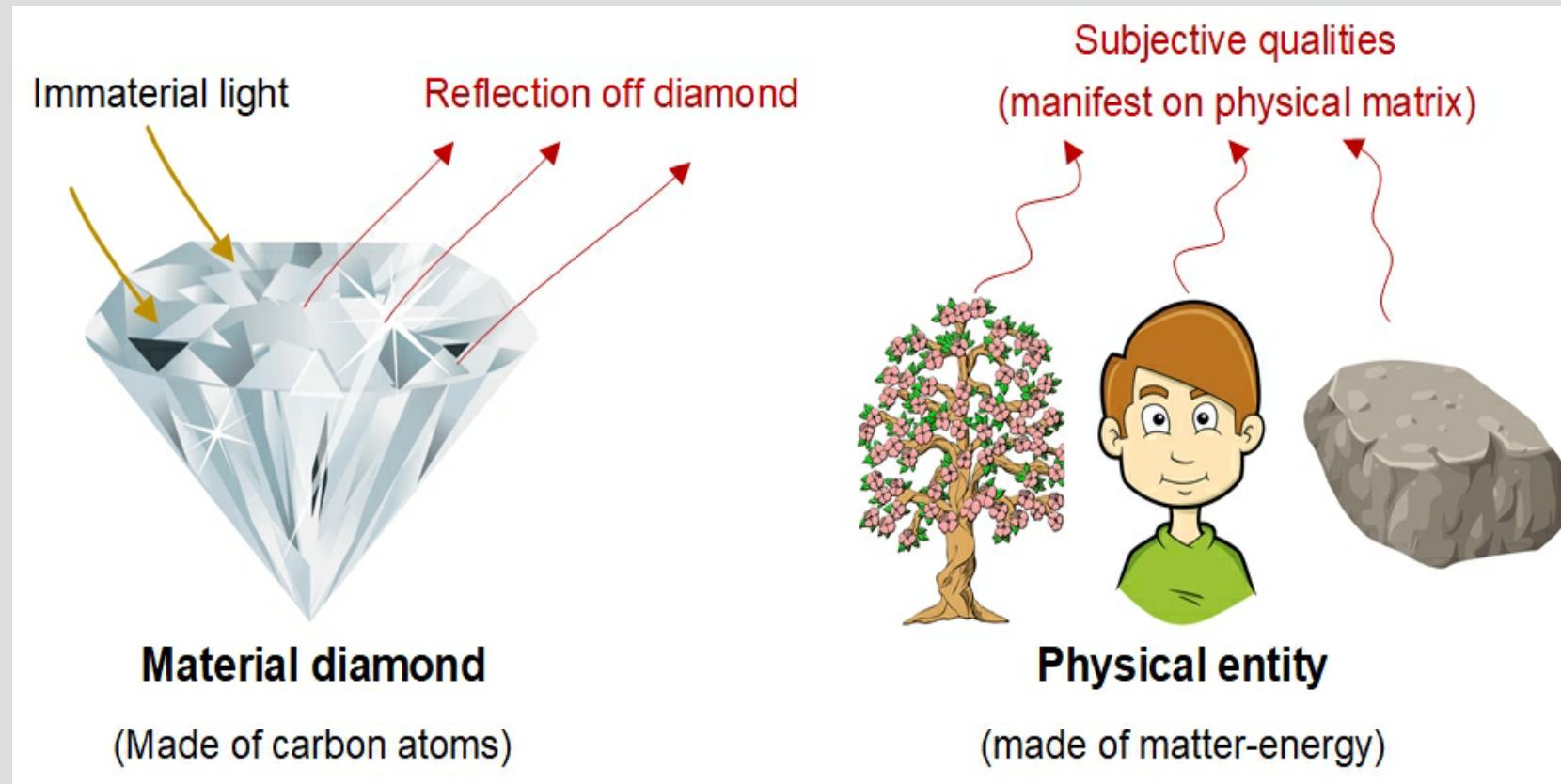
- The **two basic ingredients** of information are the **symbols** and the **meaning** – similar to **syntax** and **semantics** in languages.
- **Information** can be reduced to a physical **symbol** and a nonphysical **meaning**. These two are of different nature and thus **cannot be reduced** to one another.
- **Symbols represent information**, but they are **not** information. Symbols don't contain any meaning as their constituents.
- **Tangible symbol** always accompanies information, but the **intangible meaning** resides in a **conscious mind**, not on the symbol.
- **Information originates** from the knowledge in a mind, and eventually **ends up as knowledge** in another mind.



Information is meaning ascribed on tangible symbols by a conscious mind; knowledge is meaning that resides in the mind as percepts. Information can be perceived by the five senses, knowledge cannot.

The ‘diamond metaphor’ for physical entities: All physical things are a blend of matter and nonmatter (meaning)

Physical existence = Matter/energy + Nonphysical qualities (subjective, emergent)

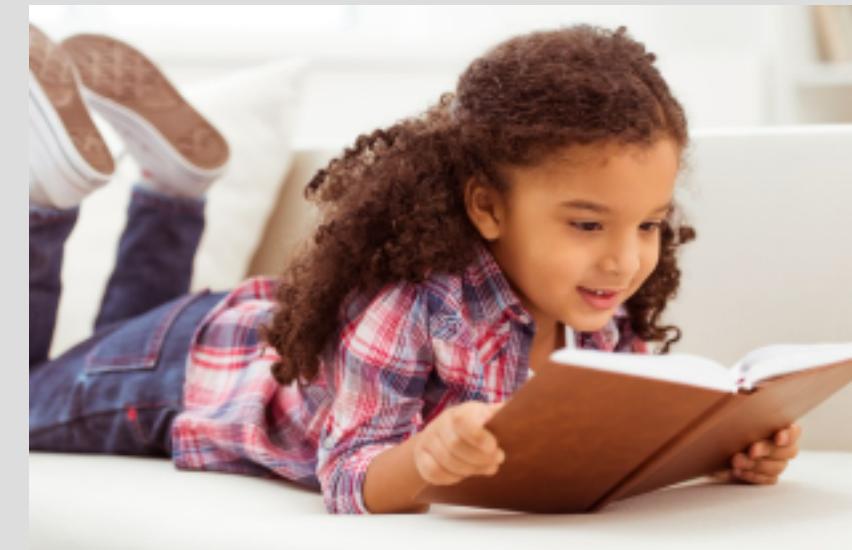


All physical entities are a **blend of physical and nonphysical existence** (or intertwined matter and meaning), like a **diamond** is a blend of **carbon** (matter) and **light** (nonmatter but still physical). All features of physical beings that cannot be constructed out of massive or energetic elementary particles of physics are nonphysical or subjective.

Information vs. Knowledge: Person is the beholder of knowledge

Although information and knowledge are essentially the same and they are often used interchangeably:

- Information is '**out there**' on symbols, but knowledge is '**in here**' in the mind.
- Knowledge is **private** and internal; information is **public** and external.
- Information can be accessed by others via the **search engines** like Google, but knowledge cannot.
- Knowledge is **acquired information** which is internalized and integrated with the knowledge base of a person.
- The **commonly known information** is also known as **common knowledge** since it resides in many minds.



The act of **reading a book** is the process of transmitting the information in the book to the mind, converting it to knowledge for the reader.

Plants (photosynthesis): Information existing before humans (conscious beings)

- Information can be said to be **implicit** or **hidden** before it is known by anybody, and **explicit** or **open** after it is discovered by at least one person.
- Obviously, **photosynthesis** was commonly taking place on earth **before any conscious being** was aware of it (information in use).
- It became **open information** after someone has discovered photosynthesis and wrote about it (information in print).
- It has become **common knowledge** as several people learned about it.
- **Photosynthesis** exists as information out there in the books, videos, and the minds of many. If I have no knowledge of it, photosynthesis is knowledge for many, but not for me.
- When you talk about photosynthesis, your knowledge becomes information out there when it leaves your mind via your words.
- When the information reaches my mind through my ears and is internalized, it becomes knowledge for me.
- When I **forget all about photosynthesis**, my knowledge of it is gone; but nothing happens to the information about it out there.



Plants: Sites (and mines) of information: Do they have knowledge? Know what they are doing?

- Although they are alive, **plants** cannot have knowledge since they do not have consciousness.
- The **humble leaf**, for example, is the site of conversion of sunlight and carbon dioxide into chemical energy through photosynthesis. It resembles an ultra-modern elegant **chemical factory** with no noise and waste. As such, it exhibits a wealth of information in action to observers.
- But a **leaf** does **not possess any knowledge**, because it is not aware of what it is doing. A leaf (and the entire plant) is not a ‘knowledgeable being.’
- As an **insentient entity**, a plant has **zero consciousness** and thus **zero knowledge**.
- There seems to be a considerable **information processing** going on in the plants, like the **weaving of the leaves** and the photosynthesis processes, but there is nothing within the plants – not even a central nervous system – that is aware of what is going on.
- Therefore, any **consciousness associated with the plants** resides in the **minds** of external intelligent observers like us, and **not the plants themselves**.



**Symbols of information:
Physical entities that make information ‘tangible’**

Symbols of information: Means of representation and transmission

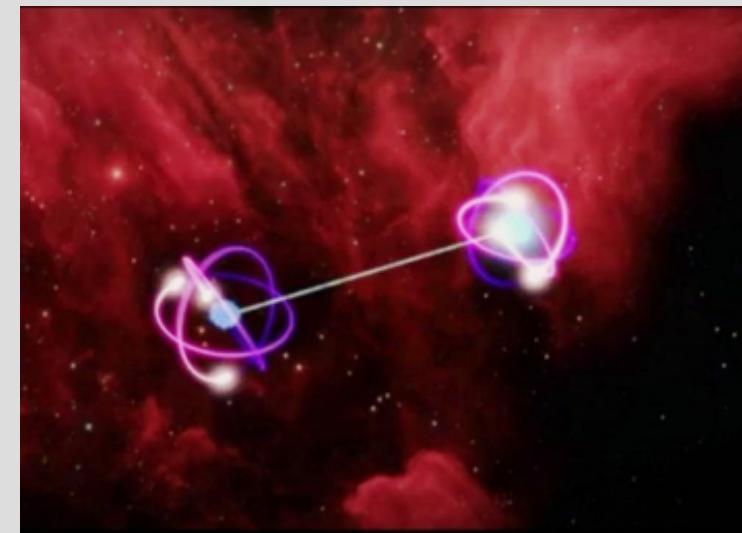
- **Symbols** have no intrinsic meaning. Association of a symbol with meaning is *incidental*, not *intrinsic*.
- Symbols serve as the *means of representation* and *communication* of meanings.
- Symbols facilitate the *transmission* of meanings between minds.
- **Meanings assigned** to symbols are arbitrary (e.g., different words in different languages.)
- **A language** is an agreed upon *convention* or *protocol* for symbol-meaning pairs.
- **Main ingredient of information** is *meaning*, which is an invisible mental existence. Information is essentially a *mental construct* (like mathematics, logic, laws of physics.)
- **Meaning** is an immaterial entity since it is not made of matter or energy, and thus it cannot be perceived by *the 5 senses*. But as beings with conscious minds, we are *aware of meaning*.
- There is no such thing as ‘*meaningless information*.’ Meaning is an essential property of information even though it can be *insignificant, vague, or wrong*.
- **Without symbols**, there would be *no information*. There would just be knowledge in individual minds, which could not be transmitted from one mind to another without symbols.

Symbols of information

- Symbols are *physical states* of assemblies of letters, numbers, signs (including traffic signs), marks, shapes, patterns, punched cards, emojis, sounds, waves, lights, motions, electric circuits, 0s-1s, DNA strands, etc.
- **Bodily dispositions** known as *body language* such as mimics, gestures, behaviors, and vocalizations; *sign language* that involves the shapes made by hands, lips and the body; *performing* and *visual arts* such as dance, music, and theatre, painting, and sculptures can serve as symbols of information. In the latter case, artists assign meaning to the arts.
- The basic building blocks of *languages* are *words*. When the English-speaking people see or hear the word ‘apple,’ it evokes the *same meaning* in their minds and they all visualize and understand the same fruit.

Speed of transmission of meaning: Timeless (instant - like entanglement & telepathy)

- Two **subatomic particles** that are generated together communicate instantly regardless of the distance between them. In quantum mechanics, this phenomenon is known as **entanglement**, proposed by Neil Bohr in 1920s.
- **Einstein** rejected this ‘spooky action at a distance,’ and challenged the entanglement phenomenon on the basis of his theory of relativity that **nothing can travel faster than the speed of light**, including information.
- In 1960s Einstein was decisively proven **wrong**.
- Einstein missed the point that the **core of information is meaning**, which is nonphysical and thus is **not subject to the limitations of space and time**, rendering the speed of travel in space irrelevant.
- **The speed of light** is binding for **physical existence** like symbols made of matter or energy, but not so for nonphysical (or immaterial) existence such as meanings.
- Perhaps the enigma of **instant or timeless communication** can be resolved by viewing entanglement (and other phenomena such as **telepathy**) as **communication via meaning** without involving symbols.
- That is, by **dissecting information** into its two components of **meaning** and **symbol**, and by asserting that information in quantum world is transmitted directly as **pure meaning** without a physical shell.
- In this case both the transmitter and the receiver must have the capability of transmitting, receiving, and processing meanings directly.



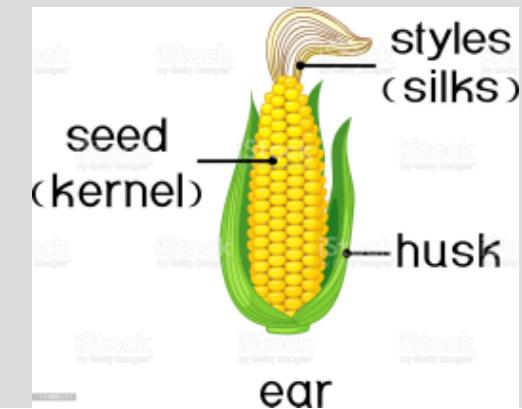
Conditioning: Failing to separate husk from the kernel

Merging of meaning with the symbols themselves

- In time, the **mind** tends to combine two things that always appear together into one, like combining the kernel and the husk into one.
- This conditioning leads the *symbols of information* to be viewed as the *information itself* since the meaning is identified with the phrase.
- The **disappearance of the meaning** when the symbols disappears reinforces this delusion.
- We all have sent **email messages** stating that ‘the information you requested is in the enclosed document.’
- For precision, we need to separate the symbol from the meaning.
- If there were **no minds**, there would be **no information** to speak of.
- **Learning a language** is the process of **matching symbols** with **conceptions**; and matching the **symbolic forms of sentences** with the corresponding **meaning** in the mind.
- That is, linking **syntax** (symbols) with **semantics** (meanings).
- Symbols are **easy to identify** since they are visible to the eye. But **existence of meaning** is often **denied** since meaning is **invisible mental imagery**.
- Meanings are outside scientific inquiry and scrutiny since they are not part of the physical realm.



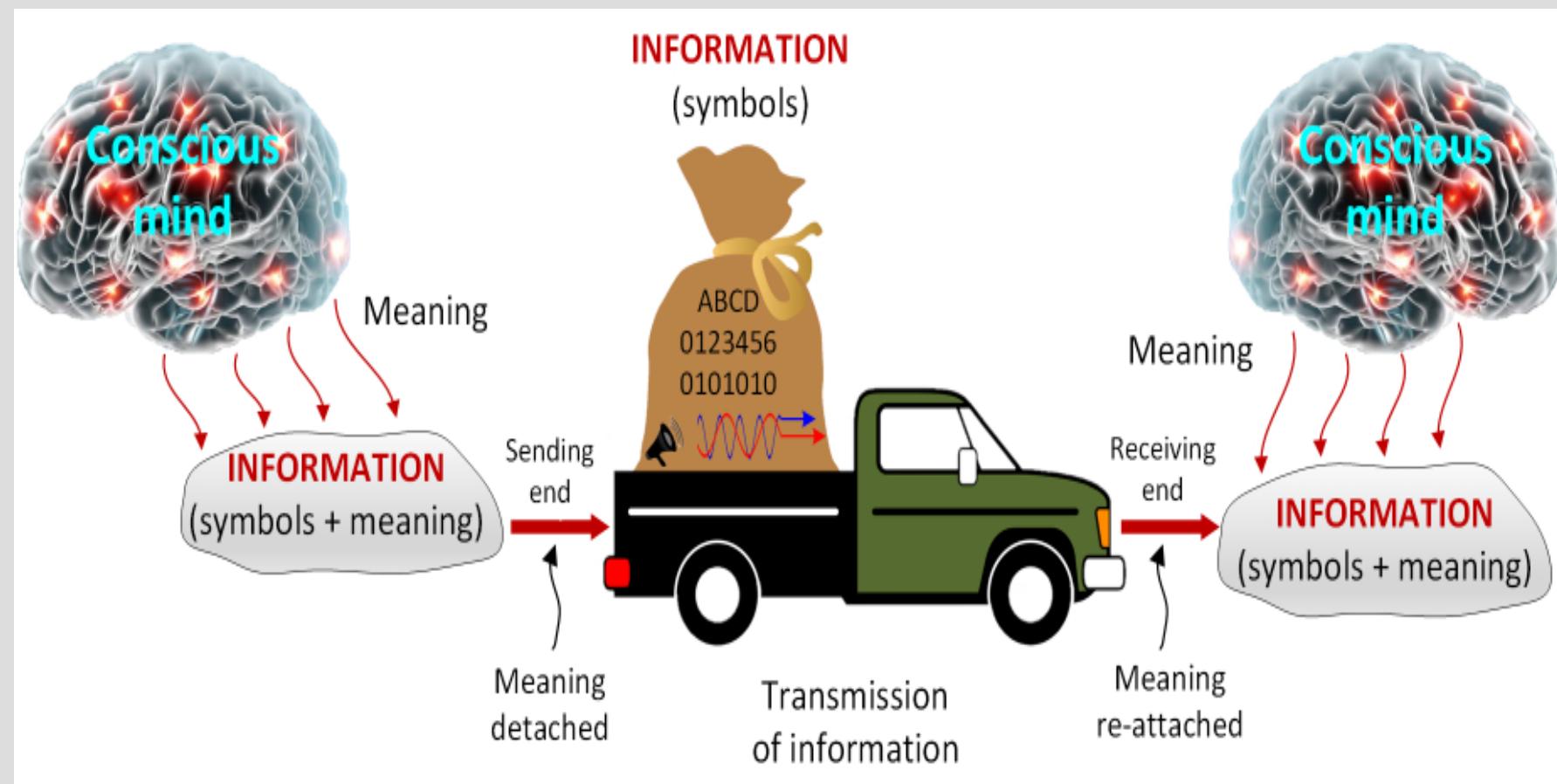
We view ‘**Apple is red**’ as a meaningful sentence, since we all **assign the same meaning** to it, and understand the same thing when we sense the phrase.



Transmission of information in ICT (information & communication technologies):

Transmission of information involves the transmission of the symbols only.

- **Communication:** the transmission of information from one mind to another via any suitable means such as the written and spoken languages, digital media, etc.
- In communications, ‘transmission of information’ simply means ‘transmission of symbols of information.’
- All means of communication are physical. Therefore, communication involves the transmission of the physical symbols of information, with the understanding that the transmitted symbols evoke the same meaning in the minds at both ends of transmission.



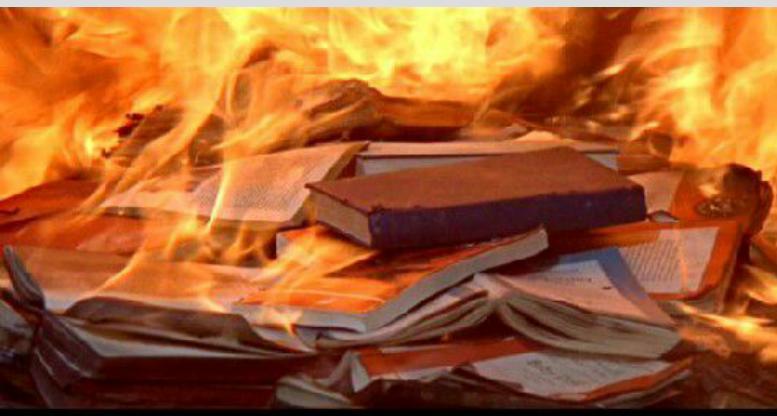
Science writer John Horgan:
“If all the humans in the world vanished tomorrow, all the information would vanish, too.”

- If human-like intelligent **aliens** were to come to the earth, they would make no sense of the collections of **symbols on papers or chips** since they don't know the language they are written in.
- Although the communication deals with the transmission of symbols, the associated meanings are also transmitted inadvertently with the symbols. Therefore, meaning is taken as granted and information is treated as mere symbols.
- The priority is the **accurate transmission** of the symbols.
- The so-called *transmitted information* is no information at all unless there are conscious beings at the receiving end who know **how symbols are associated with meaning**, and can ascribe the correct meaning to the symbols received.
- W. Weaver likens the communication theory to a **discreet operator working at a telegram station** transmitting messages.
- The operator pays **no attention to the meaning**, whether it be sad, joyous, or embarrassing.
- All she cares about is the **fast and accurate transmission of the symbols** that land on her desk. After all, once the symbols are transmitted, the meaning will take care of itself.



Destroys the symbols of information on printed paper, but not information itself

- When a piece of paper with printed information on it is put into a **blender** with water and the blender is turned on, the 'print' is gone forever.
- But **nothing happens to information**, as long as it exists in at least one **conscious mind** or on another paper.



- When a **fire** breaks out in a library, it **destroys the symbols** of information in the books, but not the information itself.
- If the **burned books** have print or electronic copies at other places, no information is destroyed as a result of this fire.



- When information is **transmitted on the web**, the **web browsers** simply **reproduce the symbols** on the screen by converting electrical energy to light energy at the tiny pixels on the screen, instead of transmitting the physical symbols themselves.
- What is **transmitted on the internet** is merely the **information related to the reconstruction of symbols** that represent information.

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Web Browser And Search Engine



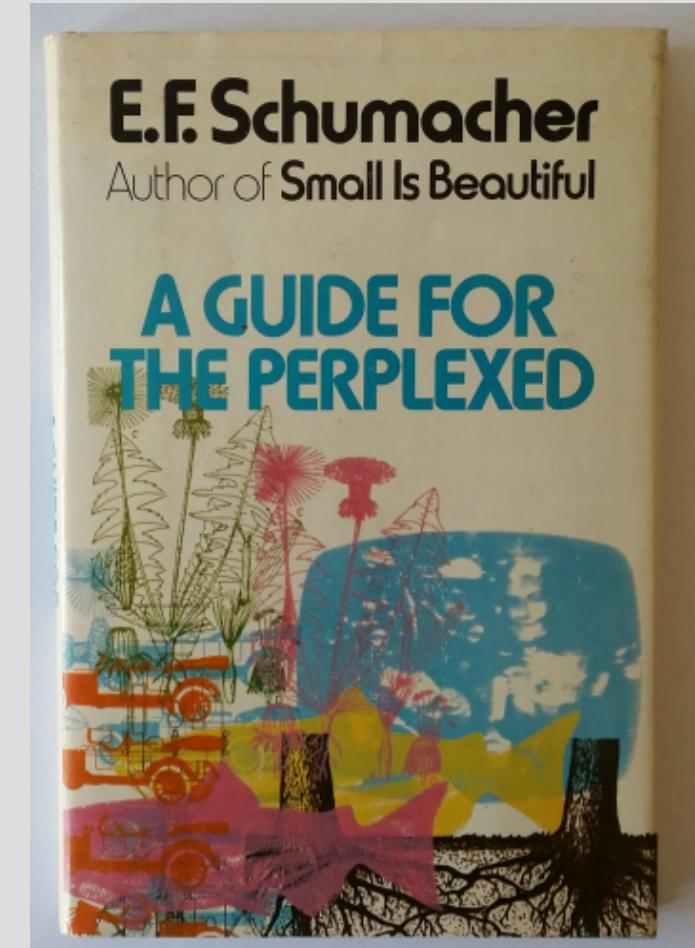
Mind – Information – Knowledge connection:

Schumacher: “Is Shakespeare’s Hamlet a property of a peculiar combination of letters?

Immaterial meaning cannot be reduced to **material symbols**.

E. F. Schumacher:

- “To say that **life is nothing but a property of certain peculiar combination of atoms** is like saying that **Shakespeare’s Hamlet is nothing but a property of a peculiar combination of letters**. ”
- **The truth is that the peculiar combination of letters is nothing but a property of Shakespeare’s Hamlet.** The French or German versions of the play ‘own’ different combinations of letters.”
- The **metaphor** equally applies to reducing meaning to matter.
- Considering that **meaning can only exist in the minds of conscious living beings**, the claim that the **symbols of information intrinsically have meaning** is equivalent to the notion that the symbols of information have a mind, and thus symbols such as words are living entities.



Knowledge in philosophy: Usually expressed as ‘justified true belief.’

- The necessary and sufficient conditions for a proposition to qualify as *knowledge* is for it to be **justified, true belief**.
- That is, for a proposition **to constitute knowledge**, it must be **true**, it must be **justified**, and the proposer must **believe in it**.
- Knowledge in this sense constitutes *confirmed knowledge*.
- Many epistemologists maintain that what is **false** cannot be known.
- Also, **failing to believe** something precludes knowing it. You can only know what you believe.
- The **justification condition** limits knowledge to propositions that are epistemologically proper.
- As such, **opinions** are insufficient to qualify as knowledge even if they are true.
- But all these conditions are **controversial**, and are still debated. (Here we use the phrase *knowledge* in a broad sense.)

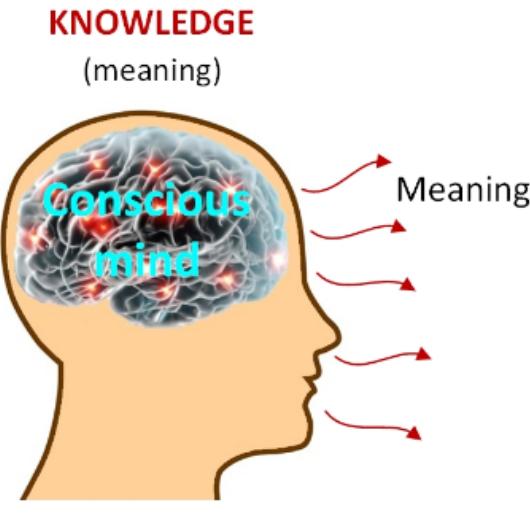
<https://plato.stanford.edu/entries/knowledge-analysis/>

The screenshot shows the homepage of the Stanford Encyclopedia of Philosophy. The URL in the address bar is <https://plato.stanford.edu/entries/knowledge-analysis/>. The page title is "The Analysis of Knowledge". Below the title, it says "First published Tue Feb 6, 2001; substantive revision Tue Mar 7, 2017". A sidebar on the left contains links to "Entry Contents", "Bibliography", "Academic Tools", "Friends PDF Preview", "Author and Citation Info", and "Back to Top". The main content area discusses the analysis of knowledge, stating: "For any person, there are some things they know, and some things they don't. What exactly is the difference? What does it take to know something? It's not enough just to believe it – we don't know the things we're wrong about. Knowledge seems to be more like a way of getting at the truth. The analysis of knowledge concerns the attempt to articulate in what exactly this kind of ‘getting at the truth’ consists."

Knowledge and consciousness:
Can there be knowledgeable without consciousness?

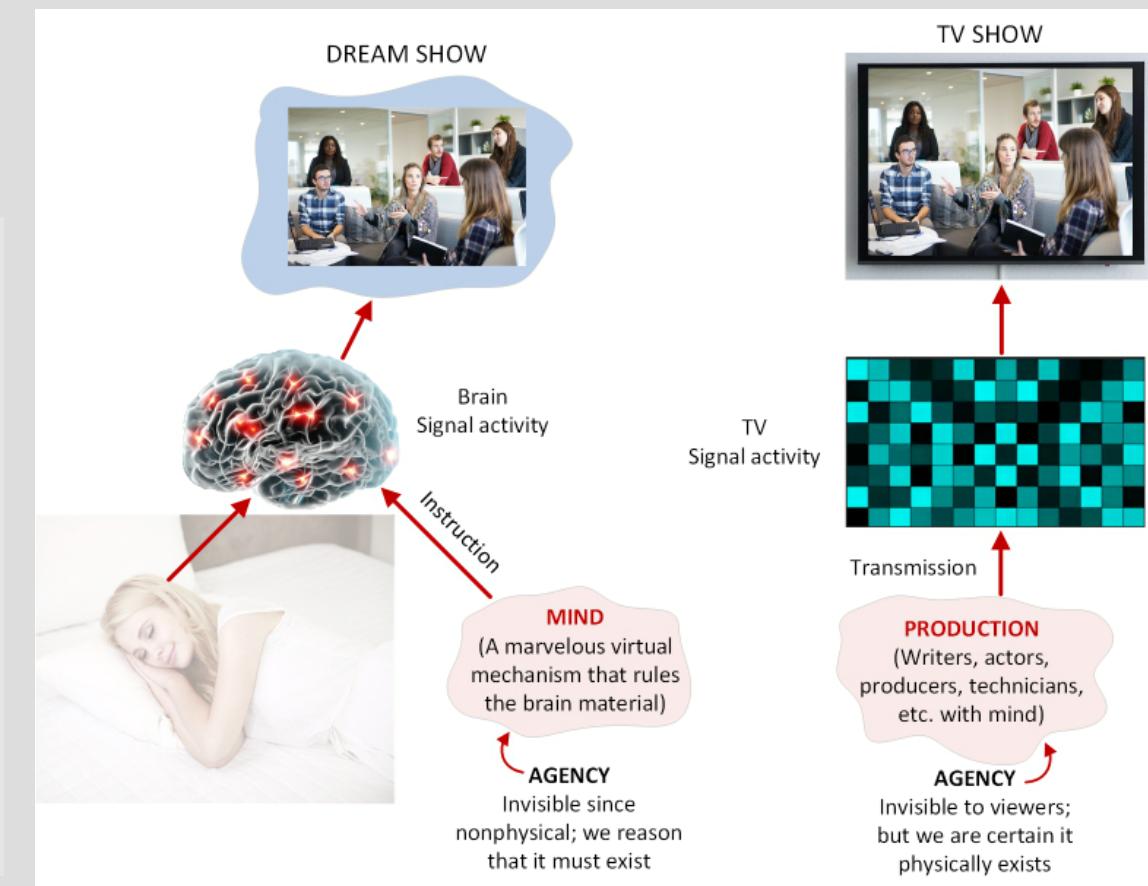
Knowledge and Consciousness

We cannot claim knowledge of anything unless we are conscious/aware of knowing it.



- **Consciousness** is a mental state directed at something with the **intention** of being aware (or having knowledge) of that thing.
- **Knowledge and consciousness** are **closely related** since both are associated with awareness – awareness of something physical or phenomenological.
- We are **conscious of even our own consciousness** since consciousness **transcends** itself.

- **Without consciousness**, there would be no awareness of existence, and thus there would be **no existence** to speak of.
- It seems that a person constructs a **projected virtual world** organized around himself – a world of representations brought into existence by consciousness.
- At the **core of the phenomenon of knowledge** lies **consciousness**, which is the enigmatic sense of awareness of one's innate states.
- The **level of knowledge** is proportional to the **level of interest and attention** of the learner, and thus the level of consciousness involved.



Knowledge and Consciousness:

Animals are aware of plants; humans know about growing plants

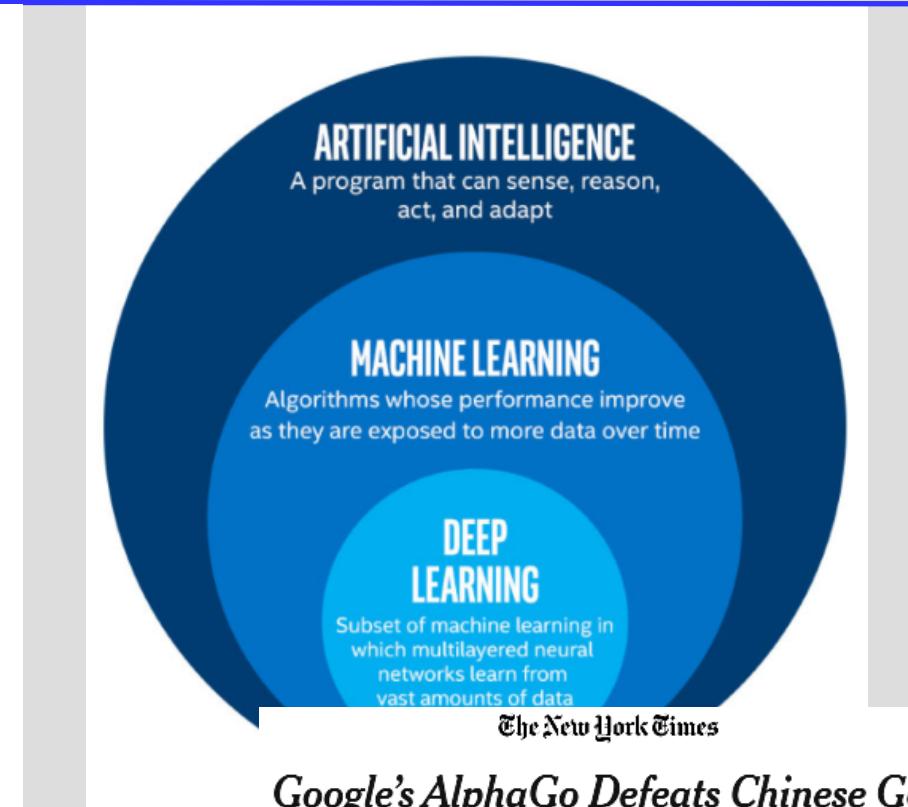
- **Higher animals** are **conscious of the leaves**, and they acquire and retain knowledge about where the most abundant leaves are for grazing and when.
- **Humans**, as beings of highest degree of consciousness, go beyond and acquire knowledge about the **chemical processes in the leaves**, and even build **artificial leaves**.
- If humans remained as **hunters-gatherers**, competing with other animals for food and shelter, there would be **no difference between humans and animals**.
- They all would have just adequate consciousness and knowledge to **notice and deplete the resources** in their environment to **preserve their livelihood**.
- **What sets humans apart from other species** on earth is their high degree of consciousness and their **high potential to acquire knowledge** that exceeds the visible realm and dwells into invisible **mental arenas** with subjective percepts.
- This **potentiality** comes with a **unique mind** equipped with the intrinsic ability for:
 - high awareness,
 - vivid imagination,
 - deep thinking,
 - comprehensive understanding, and
 - the joy of learning.
- These attributes set humans apart from all other species, regardless of the degree of **genetic similarity**.



Machine learning (deep learning):

Without consciousness, nothing can be aware of information possessed or generated

- Machines can be loaded with information and can be programmed to manipulate information at speeds much higher than humans can.
- But machines **can have no idea** of what they are doing, and what the outputs that they generate and display mean.
- This is because **knowing comes with consciousness**, and machines are unconscious.
- They simply **take in a set of electric signals** as inputs, and give out a different set of electric signals as outputs.
- It takes a **sentient being** with the senses of consciousness and knowing **to make sense out of those machine outputs**.
- Therefore, the commonly used phrase '**machine learning**' is a **metaphor**.
- **Machine learning** means **processing** the incoming signals as stipulated by the algorithm to **generate, compare, record, replace, retrieve, manipulate and transmit** signals until the signal that **meets the specified criteria** is obtained.
- A '**learned machine**' has no meaning or value without the sentient learned human being. **Google's AlphaGo computer** driven by self-learning DeepMind AI beat the top ranked **Go player** of the world in 2016. But that computer has **no knowledge of what the go game is**.
- If we ask **Siri of iPhone** what the Go game is, it will tell us all about it like an expert. But Siri knows nothing; it simply finds and vocalizes the text about the game without understanding a word of it.



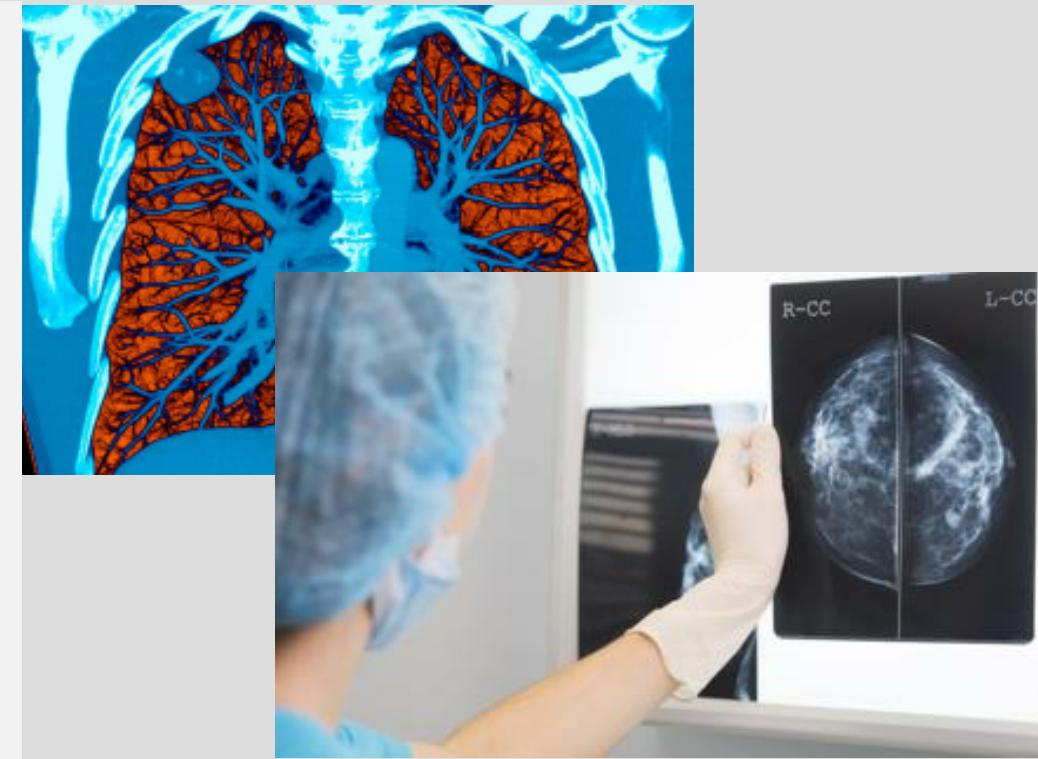
Google's AlphaGo Defeats Chinese Go Master in Win for A.I. 23 May 2017



Machine vision:

Google's AI with deep-learning beats radiologists at detecting cancer

- A similar argument can be given for the **machine vision**.
- The **sense of sight**, which is the **cognition of seeing**, is again associated with sentient beings like humans and higher animals with consciousness.
- There cannot be a 'sense of seeing' **without the 'sense of awareness'** of the **act of seeing**, and thus without consciousness.
- Today, computers equipped with AI are diagnosing patients for **cancer** by looking at the X-rays at hospitals like the radiologists do, often with more precision in diagnosis.
- But this does not mean that the **computers 'see'** the x-rays the way we do.
- They simply:
 - **digitize** the x-rays into 0's and 1's,
 - **identify** patterns,
 - **compare** them to the millions of digitized images loaded into their memory, and
 - **search** for a match.
- Reporting a **sighting** of cancer by a computer is simply reporting a **sufficiently close match** between the patterns on the X-ray of an examined patient and the patterns on the X-rays of previously diagnosed cancer patients.

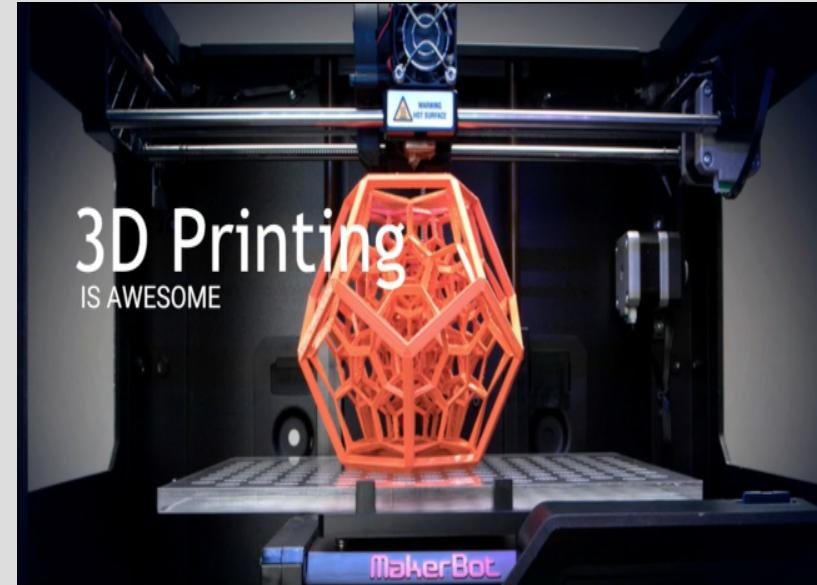


Computers are **as good or better** than doctors at detecting tiny lung cancers on CT scans. Accuracy rate: **94%**. [In a study by researchers from Google and several medical centers, *Nature Medicine*, v. 25, (2019)]

Existing as information (Wucud-u ilmi)

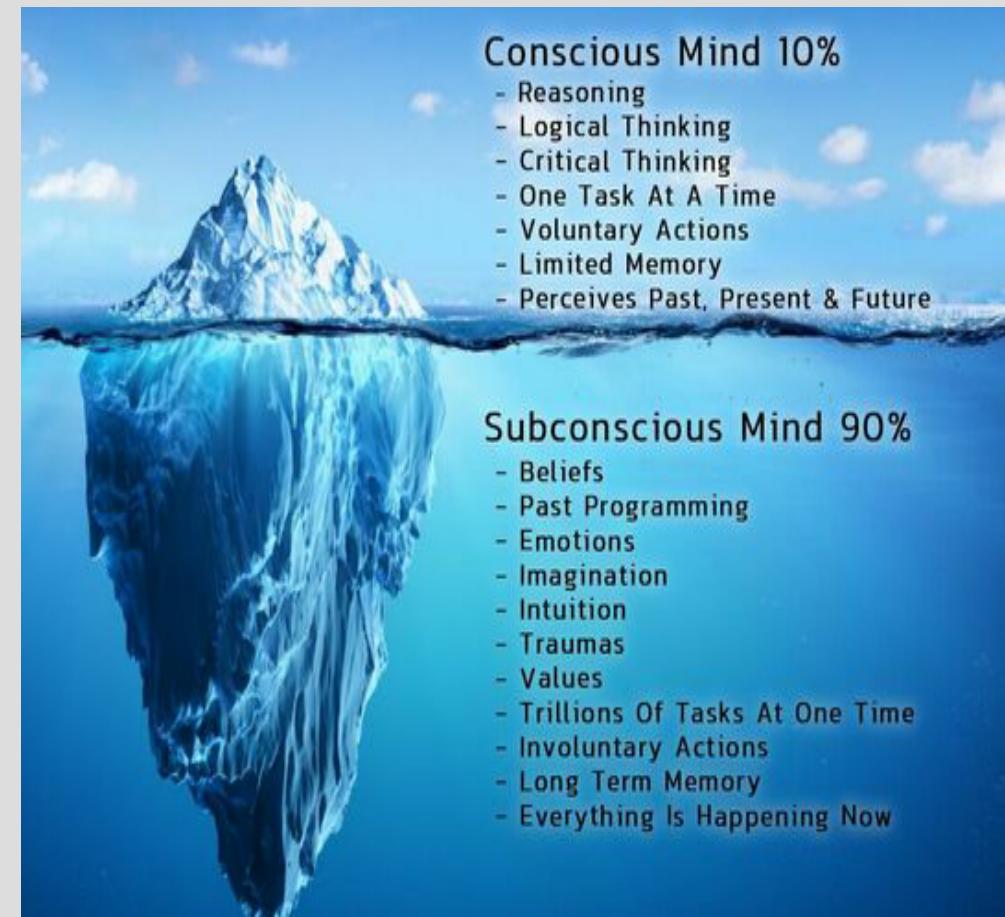
Everything is made of information

- From pots and pans to smartphones, everything made with **information** is associated with conscious beings (since meaning resides in conscious minds).
- In **archeological excavations**: Randomly shaped purposeless stones are discarded as arbitrary acts of nature. But unearthed **sculptures or cylindrical marvel columns** are cherished as archeological artifacts since they can only be made by **knowledgeable conscious beings with intent**.
- Therefore, the **foundation of meaningful existence** is information.
- The **key ingredient** of all **meaningful man-made things** is also information.
- The process of making physical items like **pots, cars, and phones** is essentially the **embodiment** of mental abstractions that are **weaved out of the threads of information**.
- The informational abstractions are called **designs**, and are represented physically as **blueprints**.
- The process of **3D printing**, also called additive manufacturing, is merely the **manipulation and arrangement of matter** as dictated by the information encased in the software.



Memory (passive knowledge): Knowledge = Consciousness (active knowledge) + Memory (passive knowledge)

- We have knowledge of everything that **we** are conscious of at this moment.
- But we are not conscious of **everything** that we know since our knowledge base extends beyond the current moment.
- It includes prior knowledge stored in our **memory** that we access as needed.
- Therefore, memory represents **retrievable passive knowledge**.
- **Subconscious realm** represents knowledge that somehow exists in the mind of a person, but is not readily accessible to the consciousness. As such, subconscious existence is outside the sphere of awareness. Yet, it can be accessed by waning down the physical perception and inducing an altered state of consciousness through suggestion, meditation, hypnoses, dreams and sometimes trauma.
- The **sense of consciousness** is the momentary *active or experienced knowledge*, which is the projection of one's knowledge base on the current moment.
- Active knowledge involves **attention**, and thus **intentional consciousness**.
- We all know that we have **lungs**. But it becomes active knowledge only when we direct attention to the lungs.
- **Memory** is the **passive knowledge** that can be **reactivated at will**.
- Memory serves as the **repository** of personal information in one's mind.
- Items recorded in our memory in the past but are erased now are no



Conscious Mind 10%

- Reasoning
- Logical Thinking
- Critical Thinking
- One Task At A Time
- Voluntary Actions
- Limited Memory
- Perceives Past, Present & Future

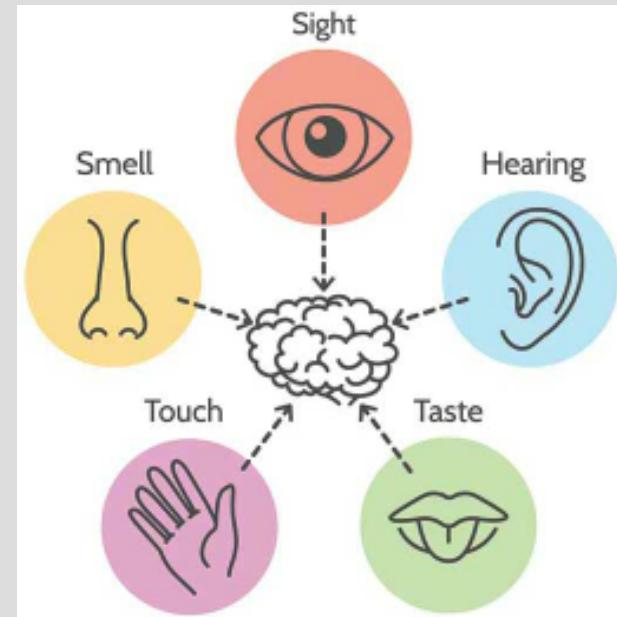
Subconscious Mind 90%

- Beliefs
- Past Programming
- Emotions
- Imagination
- Intuition
- Traumas
- Values
- Trillions Of Tasks At One Time
- Involuntary Actions
- Long Term Memory
- Everything Is Happening Now

Consciousness is the **current state of awareness**, and it encompasses things that we are currently experiencing either **physically** via the five senses, or **mentally** via thinking, or **emotionally** via feeling.

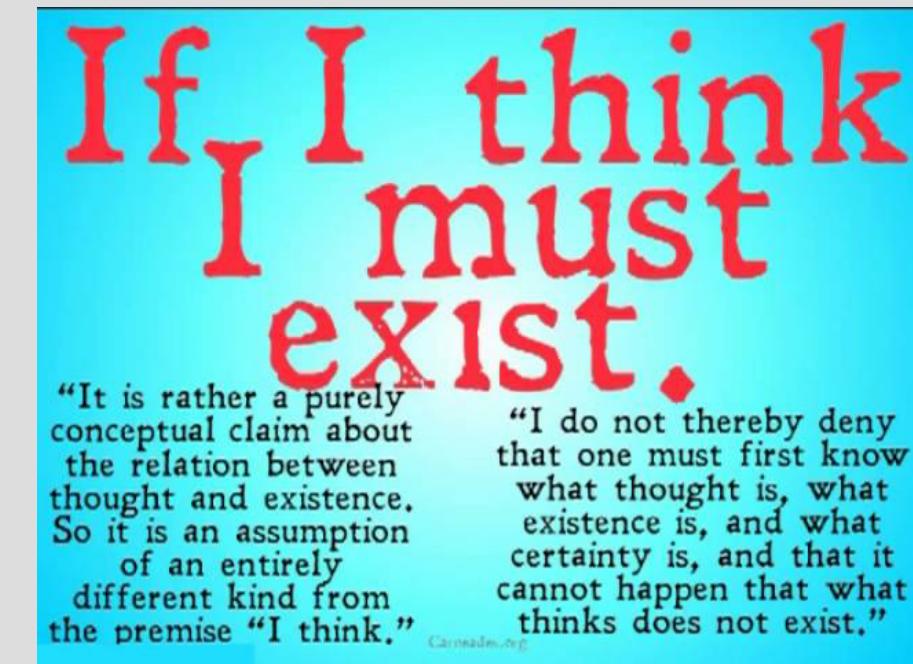
Perception (physical or the sixth sense): The innate sense of awareness

- The **objects of awareness** may include **thoughts**, **dreams**, and **reactivated memories** as well as **physical entities**.
- When we **faint**, we are unaware and thus **unconscious** and **unknowing** of anything. There is **no perception** when a person is unconscious.
- **Cognition** is also closely related to knowledge since conscious **cognitive activities** such as **thinking**, **reasoning**, or **remembering** can result in knowledge of conscious beings.
- **Perception** is the **innate sense of awareness** produced in us. It is called **physical (or sensible) perception** if the sense of perception is received through the **five senses** and thus originates from the physical realm.
- The **sixth sense**, excitement, enthusiasm, and initiation, are called **intuition** (or **instinct**).
- **Experience** is the awareness of the **signals of sensible perception** and **intuition**, which constitute the raw material of knowledge.
- We tend to **look down** on experiences that are not connected with physical perception. But **intuition conceived in the mind** can be as powerful.



I think, therefore I am: Thinking (intuited information) as an evidence of existing

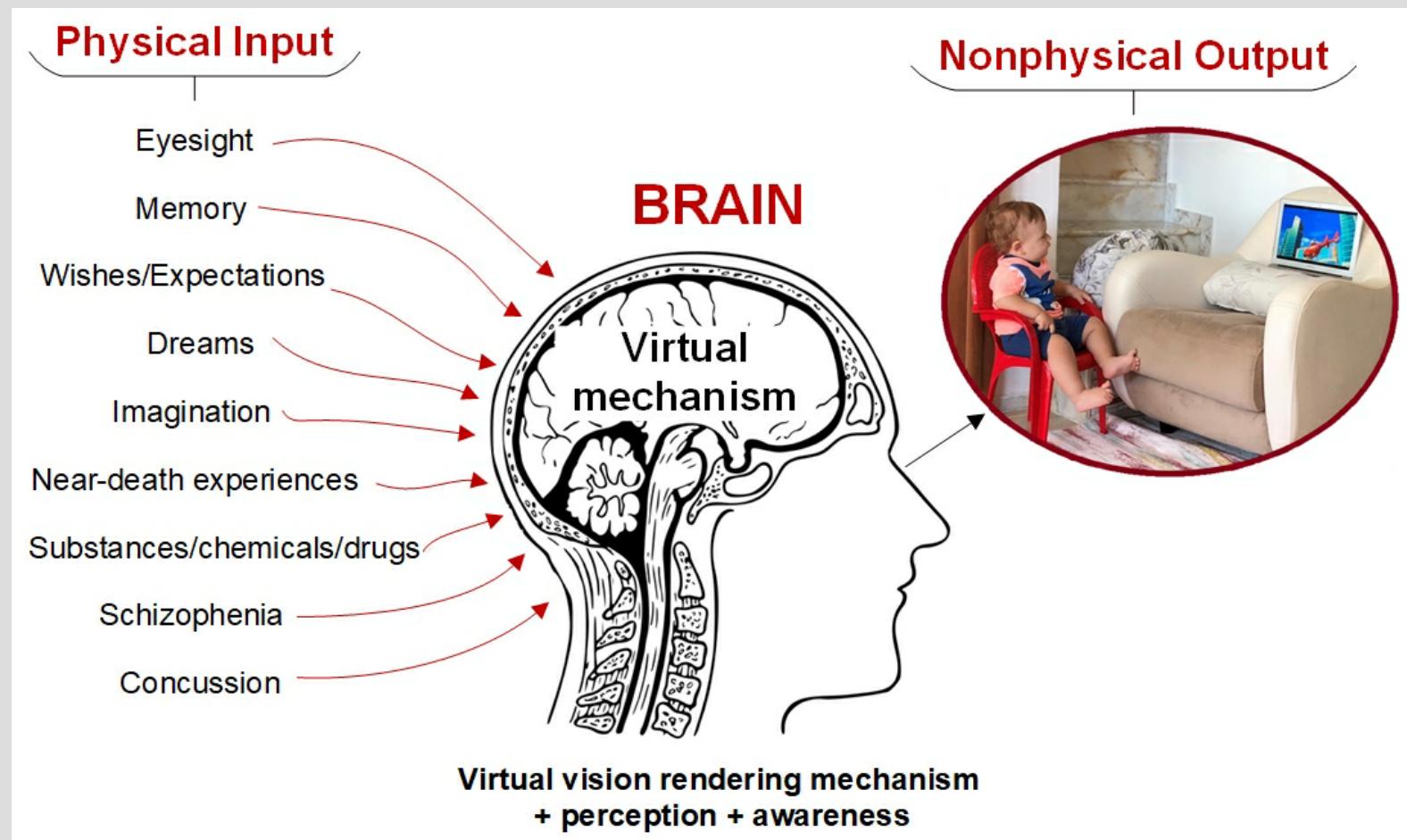
- A thinking person knows with absolute certainty that there is thinking going on.
- There can be no mistake that there is an entity that does the thinking, and that entity is me.
- When I become aware that I am thinking, it is self-evident that I exist – regardless of the truth or falsity of the contents of the thoughts.
- We intuitively know that it is impossible to think without existing. Therefore, intuition should be regarded as a credible source of information, even though it does not strike us as concrete as sensory information that stems from physical perceptual inputs.



Perception: A virtual reality simulation

Most disguised deception?

- What we call **perception** is perhaps the most disguised **deception** since perception is a **virtual reality simulation** of reality reconstructed by the mind, not the actual external reality itself.
- Our **knowledge of the physical world** around us is derived from our perceptions which are manipulated by the mind to give us the impression of reality.
- Also, the **perceptual experience** is **failable** since the world is not always as it appears to us.



Mind – Information – Knowledge Relation: Can there be knowledge without conscious minds?

Mind – Information – Knowledge:

Mind: the necessary external agent of information

- Symbols of information are lifeless physical entities made of matter or energy, and all clusters of matter and energy are intrinsically meaningless. (Any suggestion to the contrary is implausible.)
- Reorganizing matter into a certain shape (such as dispersing some ink from a pen to form the sequence of the letters **A-P-P-L-E**) does not bestow meaning to it. The pattern of ink in the inscription APPLE is meaningless, except for those whose minds are equipped with the knowledge of the English language.
- This is similar to reorganizing matter in the form of a living being, and expecting the organization to bestow life to it.
- No information will exist without a mind.
- Dictionaries would be meaningless piles of inked paper without a mind.
- The mind gives meaning to symbols, and then conjures meaning from the symbols of information to induce learning and understanding.
- Even the symbols used to represent information are the creations of the minds of conscious beings.
- Information exists only when the symbols of information interact with a conscious mind.
- The mind is the subjective entity that transmutes symbols of information into meaningful entities.



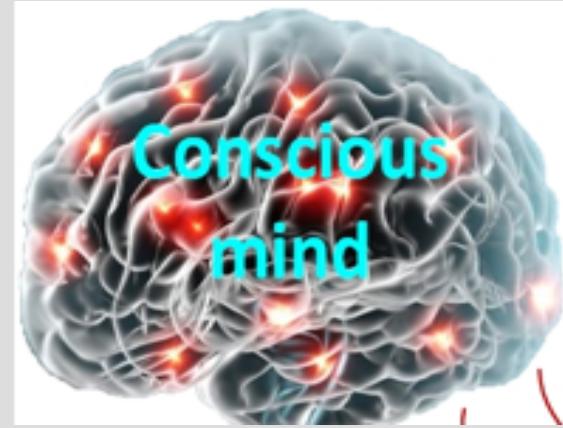
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Without knowledge of French,
this is 'inked paper.'

Different aspects/faculties of the mind:

Intellect, imagination, memory, consciousness, sense of self

- Centuries-old mind-body problem: Is the **mind** an illusion, a creation of the brain, or a separate entity distinct from the body?
- Despite different opinions on the origin and nature of mind, our common experience will vouch that ‘something’ with certain characteristics is an **inherent part of the human existence**.
- There can be no perception or experience without the mind. It is the faculty of conceptualization of experiences and making sense of them.
- **Intellect** is the aspect of the mind that deals with **reasoning, thinking, judging, finding causal links, noticing similarities, recognizing patterns, forming associations between related phenomena, and inferring via deduction or induction**. Meanings that appeal to reason, logic, analysis, evaluation, and judgment are somehow routed to the intellect.
- **Imagination** is the faculty of the mind that **depicts mental images** for both tangible and intangible entities. The human mind appears to have the capability to **encode** aspects of the physical world as abstract representations and to record it, which is the act of knowledge generation, and to **decode** them back into a physical form, which is an act of expression.
- **Knowledge** is derived from sensory input, but is apparently constructed by an enigmatic personalized mental cognitive mechanism.
- All **mental faculties** function in such **coordination and unity** that they appear to be different aspects of a one distinct entity, called the mind.
- Our innate world appears to revolve around a central aspect of the mind, called the **sense of self** or the ‘innate I.’



Elusive **mind** is the name used for the supposed **center of perception, experience, consciousness, and knowledge**.

Memory, imagination, dreams (even mirror images):

Appear to be woven of the same fabric, and belong to the same ethereal realm (as mind)

- **Knowledge** exists in a person's mind, and thus it is a **mental phenomenon**.
- We **cannot see knowledge** since it is not matter but meaning, and thus a subjective entity, like the mind itself.
- Currently, **no technology** exists to **retrieve the knowledge** (including memory) of a live or dead person since neuroscience cannot tell us the mode and the code of registering.
- Therefore, there is a need for an **intermediary medium for the transmission of knowledge** as information from one mind to another.
- The act of **conversation** is the process of **conveying meanings** from one mind to another, with sound waves in the air acting as the physical carrier. The brain waves generated can also serve as the medium of transmission of information since certain waveforms correspond to certain meanings.
- Unlike an ordinary **memory chip**, there appears to be **no physical storage media** in the human brain which changes states as experiences are recorded, and no identifiable mechanism of retrieval.
- **Memory** appears to be **virtual reality**, like imagination and dreams. That is, all our experiences are recorded and stored in a **virtual cloud** 'out there.'
- The mind **accesses the memory** by simply **willing**, and **directing attention** to the intended experience.
- **Amnesia** is the breakdown of the virtual mechanism to access memory (the inability to recall past experiences.)
- Unlike the **memory sticks** or hard disks of a computer, we **cannot erase our memories**. But some memories seem to fade away unless they are reinforced by intent and attention.



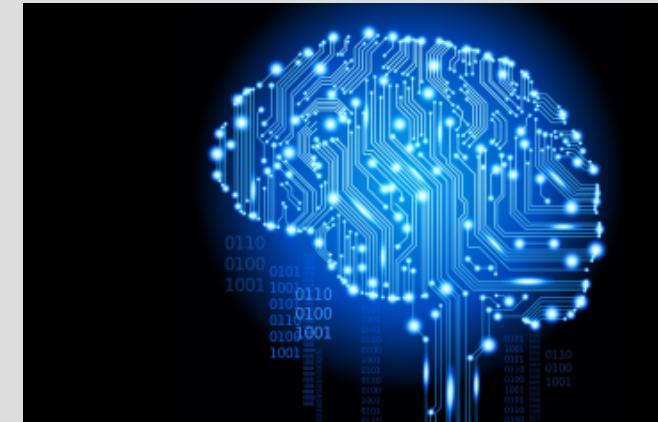
Loosing consciousness and/or memory after a brain injury: Does it mean consciousness and memory are creations of the brain (a 1.3-kg fatty meat)?

- We cannot access the **internet** and **the YouTube videos** when our **smart phone** is **damaged**; but this does not mean that the content of internet and YouTube videos are the creations of our smart phone.
- The intense electrical activity in the millions of circuits in the **microprocessor** of a smartphone cannot even generate a single frame of meaningful picture or a **trace of consciousness** by its own doing.
- **Meaning** is often perceived as something **generated by the symbols**, which is absurd since symbols are merely clusters of senseless letters, sounds, signs, etc.
- Symbols of information are treated as the information itself as part of the effort to reduce everything to matter under the influence of the **materialistic reductionist worldview**.
- This is a deeply entrenched delusion propagated by the observation that **meaning always accompanies symbols**.
- Meaning is usually taken for granted since it is a **mental phenomenon** rather than being physical, and often it is not even recognized as existence, since the **mind** itself is portrayed by some neuroscientists as an **illusion generated by the brain**.
- Such conjectures are the natural extensions of **limiting existence to matter**, and the **dogmatic presumption** that all existence must originate from matter and be reduced to matter, which is just a preconceived notion and not science.



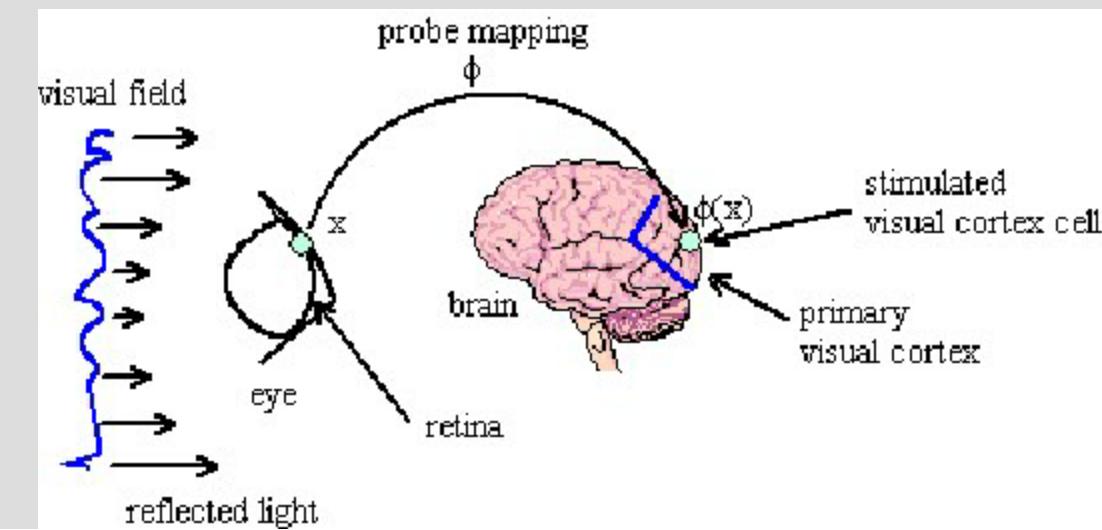
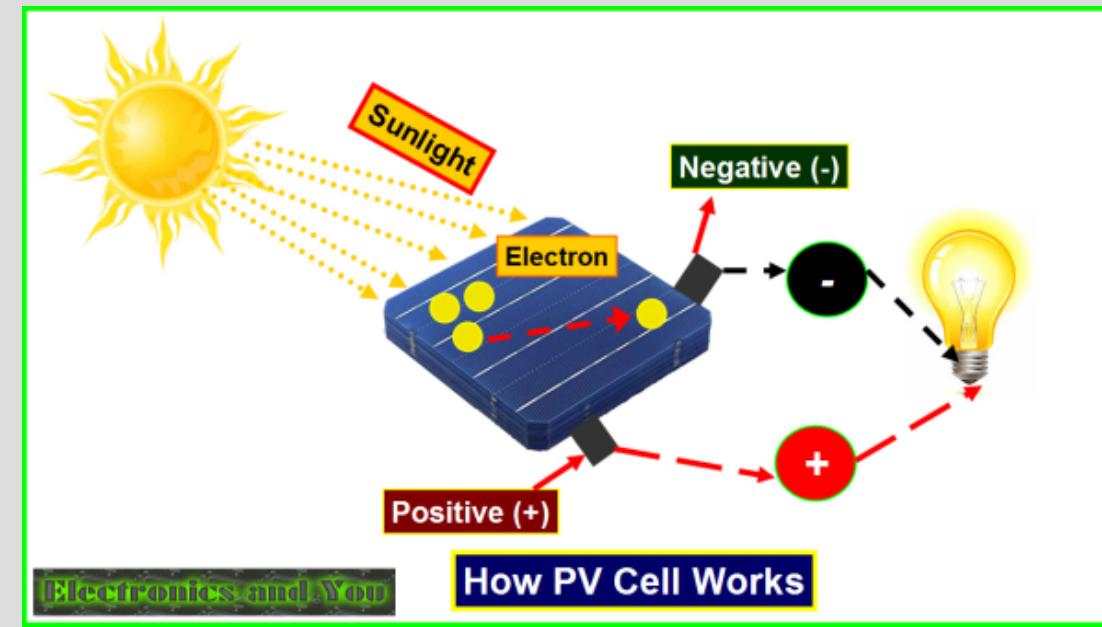
Signals of information are not information: Electrical activity in the brain is not information processing

- Misunderstanding of information is not limited to just confusing **symbols of information** with the **information** itself.
- The **signals of information** are also confused with **information**, and are treated as such.
- When we press the **A/C button** on the control panel of a car, for example, all we are doing is to **generate an electric signal** that is routed to the input gates of the microprocessor of the car, which generates a signal to turn the air conditioning device on. Therefore, the microprocessor of a car simply processes **signals** per instructions in its software, **not information** – the microprocessor has no idea of what it is doing.
- But the conscious and knowledgeable makers and users of the cars refer to this as '**information processing**' since those **signals correspond to information** in their minds. The intense electrical signal activity in a microprocessor would not correspond to any information if there were no conscious and knowledgeable beings like humans.
- **Natural processes** – such as **radioactive decay** and the **sun giving off photons** – generate **a tremendous amounts of signals**, but **no information** since no mind is involved.
- Sunlight striking on solar **PV cells**, for example, generates a lot of electric signals due to the photoelectric effect which can be collected as electrical energy and fed into the electric grid, but no information is transmitted with those signals over the grid.
- Likewise, **neurons in the brain** fire electric signals to other neurons through the synopsis when their electric charge exceeds a threshold value. But again, this is a **purposeless natural signal emission** just like the radioactive decay, and there is no information associated with it.



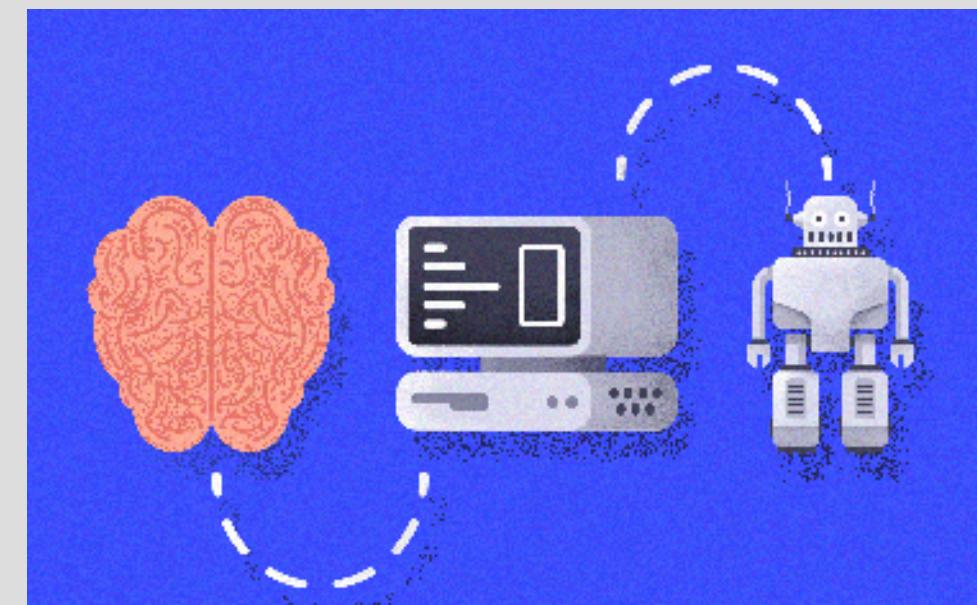
Light striking a PV cell or retina of an eye: Are the electric signals generated any different?

- When the **light strikes the retina** in our eyes, a **natural electric signal** is generated and is transmitted to the cells in the brain.
- It carries **no more information** than an electric signal generated when sunlight strikes a solar PV cell since there is no meaning ascribed to either of them.
- Then it follows that the **intense electric activity** in the brain is simply a **purposeless maze of electrical activity**, and not information processing.
- So, it is no surprise that when a person is **sleeping**, fainted or in coma, there is no easing down of the brain electric activity.
- But this **brain signal activity** cannot be called **information processing** since there is no consciousness and thus no ascription of meaning involved.
- Perhaps we should reconsider the current practice of turning a blind eye to the **enigmatic mind** just because we have no clue as to how to deal with it.
- An **unprejudiced fresh approach** is needed if we are to have any chance of unearthing some deep mysteries and getting a more factual picture of reality.



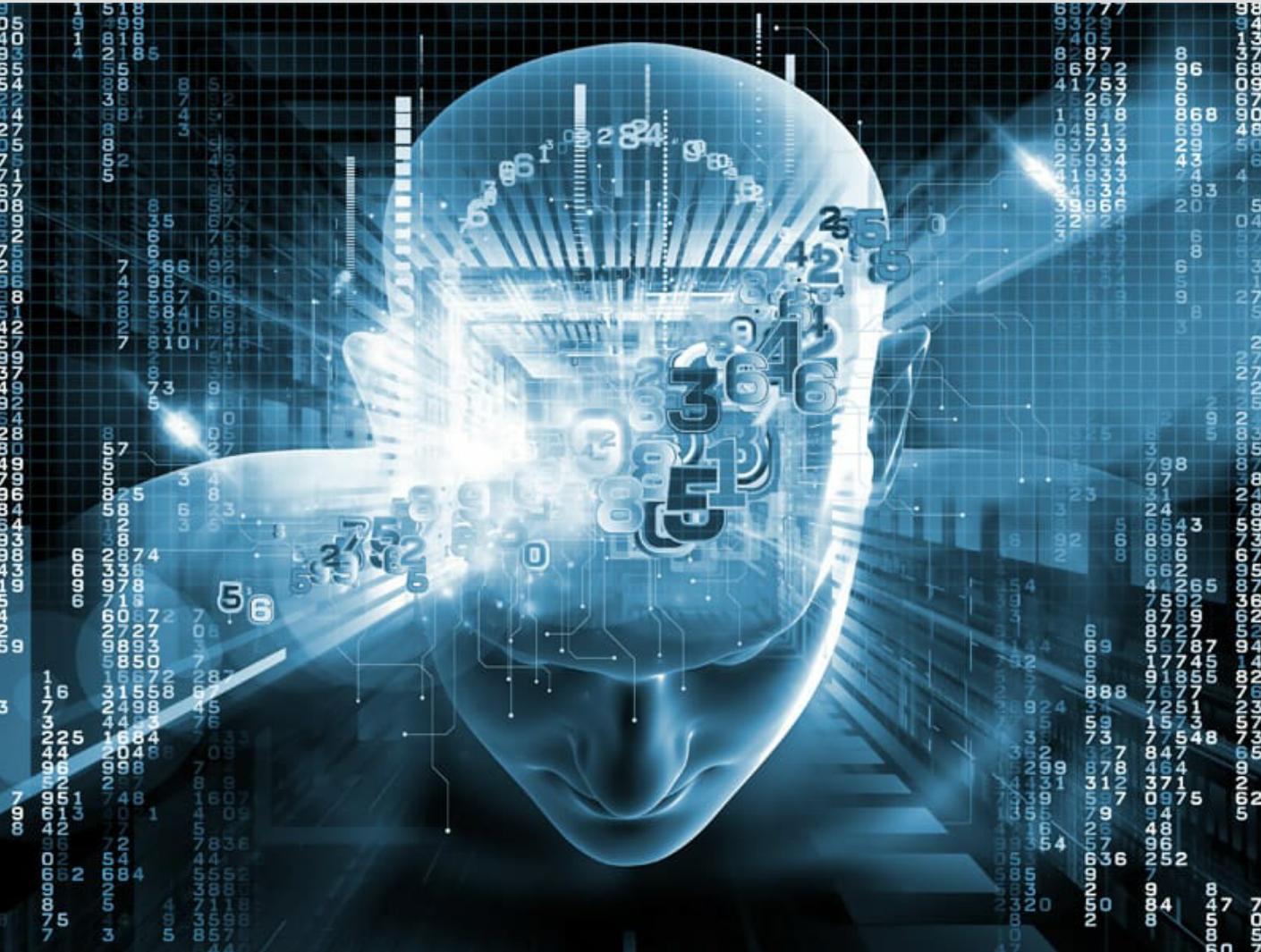
The futuristic notion: Can the human memory be downloaded and then be uploaded to an artificial brain?

- One of the favorite topics of discussion of futurists is the prospect of downloading the information that resides in the **memory** of a terminally ill person, and store it for future use.
- When the technology advances to the point of making **artificial brains**, the stored memory is to be **uploaded** to a new body.
- This will supposedly enable the person to live on from where he/she left off since **the essence of a person** is presumed to be information.
- This overly simplistic notion which stems from the **brain – computer metaphor** misses the point that the **brain and conscious mind** of a live person is much more than a software-loaded microprocessor, such as a smart phone.
- For one thing, we can download or transmit **only the symbols of information** via physical media, and **not** the subjective meaning which is the essence of information.
- This means, no stored information (more correctly, symbols of information) will **acquire meaning** unless it is **linked to** and processed by a **conscious mind**.
- Therefore, unless the **futuristic technological body** comes equipped with a **conscious mind** and closely resembles a live person who suffered amnesia, the notion of downloading and uploading memory may turn out to be just a delusion.



Information (actually, ‘symbols of information’) portrayed as agency: A knowledgeable skilled **agent** or a pile of ignorant inept **symbols**?

- Information is often presented as a **powerful and knowledgeable mystical agent** that
 - reads the information itself,
 - understands it,
 - applies it skillfully
 - with the power to subjugate and organize matter.
- That is, information is portrayed as an **enigmatic agent** with
 - intent,
 - knowledge,
 - skill, and
 - power to rule matter.
- Such notions are groundless delusions.



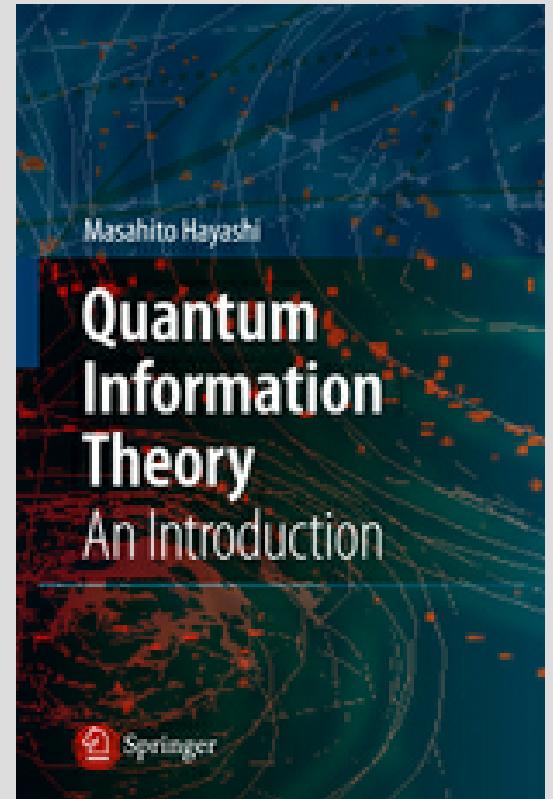
Entropy – A thermodynamic property: The notion of conservation of information

- ‘Entropy’ is a physical property of a system associated with the temperature and pressure of the system. Yet, the thermodynamic property ‘entropy’ is commonly used as **synonymous with information**, especially in communications.
- The culprit for this confusion is mathematics: Both **entropy** and **information** share the same form **of probabilistic mathematical definition**, although they have different meanings.
- **Entropy** used in thermodynamics is associated with **energy**; entropy used in information theory is associated with **uncertainty and probability**, with no regard of meaning.
- The **conservation of entropy** in reversible processes and the illicit relationship between **entropy** and **information** led to the notion of **conservation of information**. But this notion is usually associated with the **uncertainty principle in quantum mechanics** and the possible quantum states of subatomic particles, and thus is of statistical nature – just like the number of possible states associated with the tossing of a coin being 2.
- In general, there is no such thing as **conservation of information** associated with the physical realm at macroscopic level.
- The misleading notion of the conservation of information is limited **to probabilities of occurrences of events**, just like the notion of the conservation of entropy in thermodynamics is limited to the ideal reversible processes.

Shannon's entropy equation:

$$H(X) = - \sum_{i=0}^{N-1} p_i \log_2 p_i$$

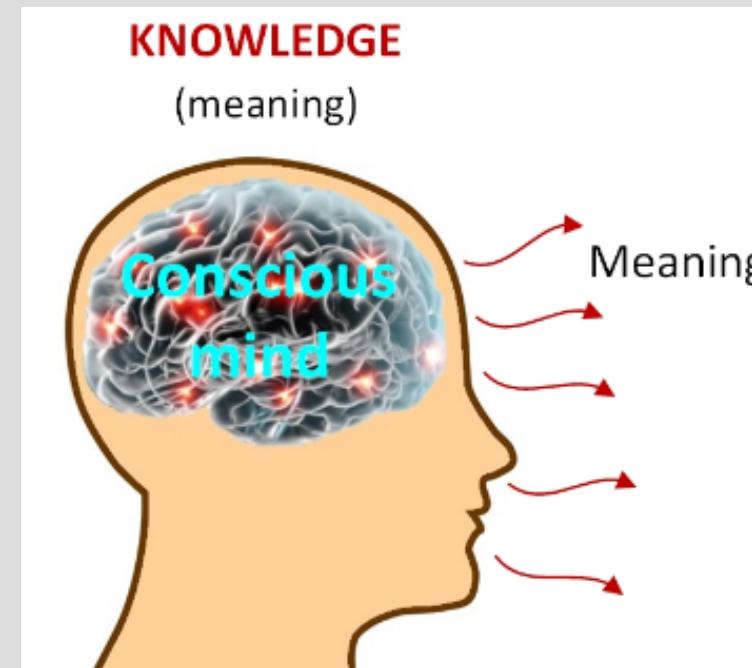
Entropy is a measure of uncertainty
(NOT a measure of information).



Origin of information: Conscious mind

Knowledge (meaning) in the minds wrapped in physical symbols

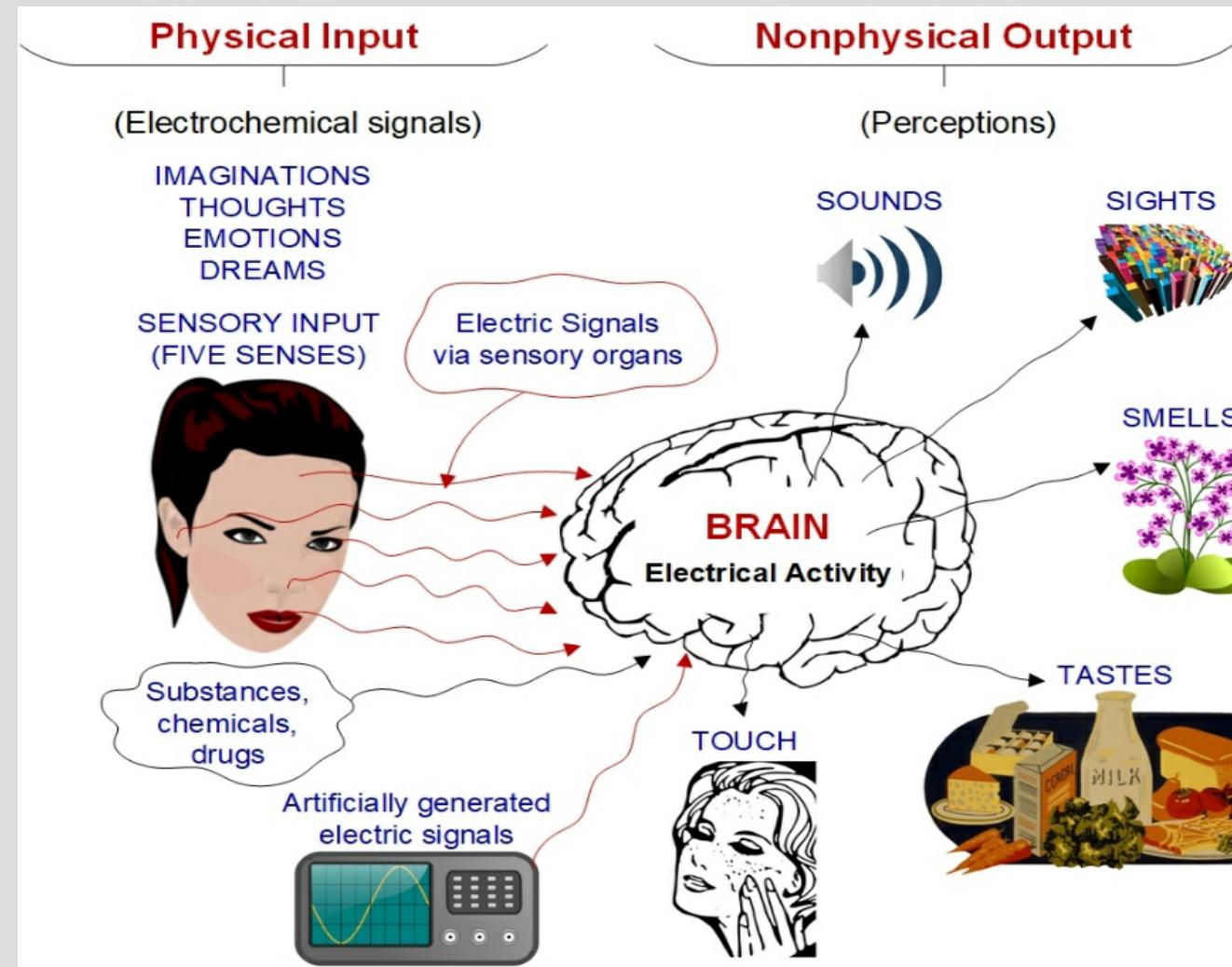
- Strictly speaking, the **origin of new information** is the **knowledge in the mind** of a conscious being (not the physical realm of matter and energy) since information is the **packaging of knowledge by a conscious mind** in a physical wrap.
- Knowledge becomes information when it is passed on to others via the **impressions of the physical symbols** that serve as the vehicle or means of transmission.
- Therefore, the **existence of a conscious mind that imparts meaning to the percepts** it receives is a **prerequisite** for the existence of information.
- The information produced this way can then be **perceived by others** as a source of knowledge.
- Information takes on meaning from conscious minds. If **all conscious beings** were suddenly to vanish, there would exist a lot of **corpses of symbols of information**, but no information at all.



Five senses = Perceptions generated by the mind from electric signals

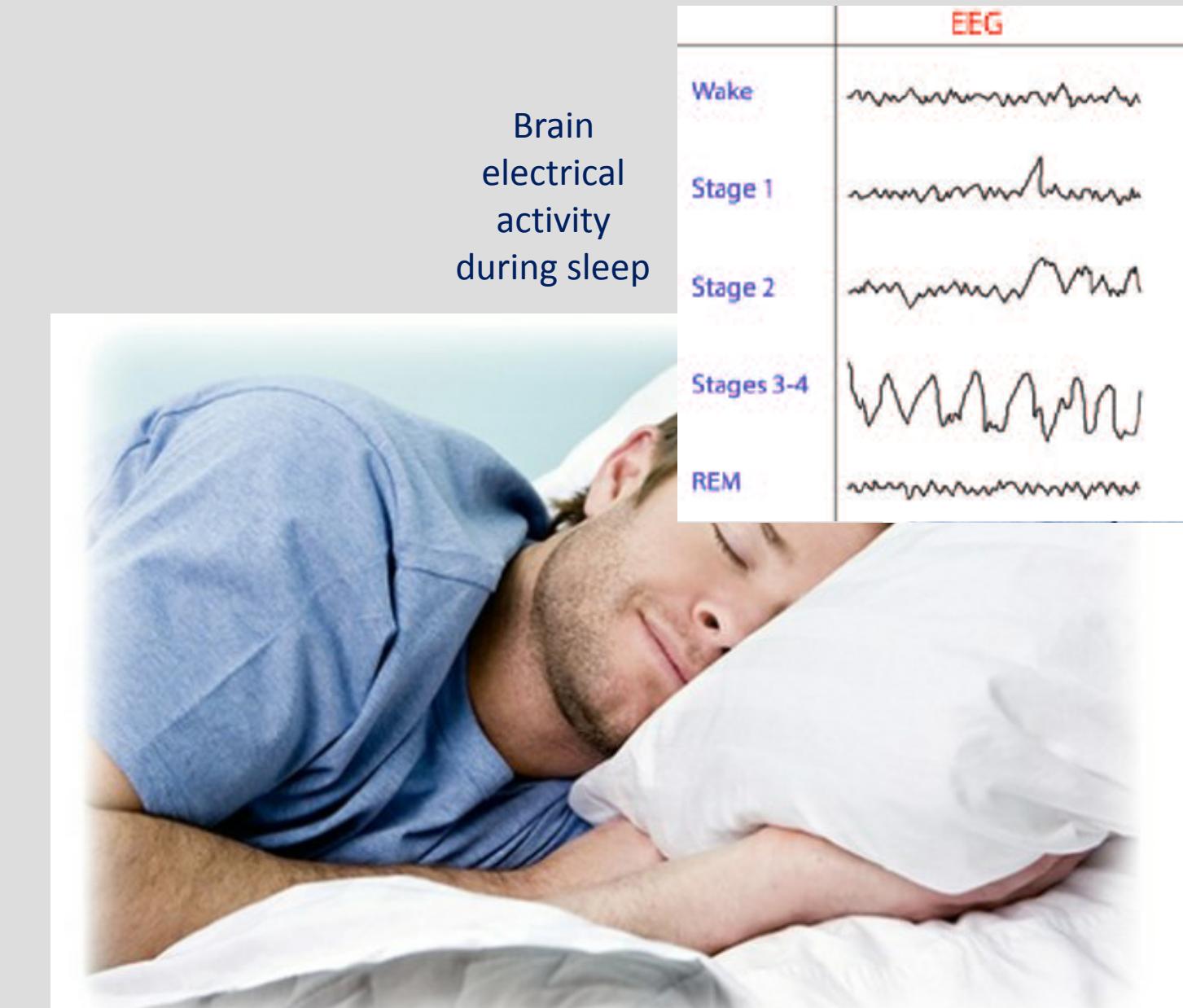
Mind = The perceiver/processor/interpreter/renderer of signals (& ascribes meaning)

- Most of the **existing information** is related to and originates from the **physical realm**.
- The **channels of perception** or sensing between the mind and the physical realm are the **five senses** of sight, smell, touch, taste, and hearing. They **convert the percepts to electrical signals** and transmit them to the brain for processing.
- The processed signals are **interpreted by the conscious mind** against the backdrop of knowledge base stored in the **memory**, and are perceived as recalled knowledge if a match is found.
- Otherwise, the incoming signals are interpreted and **ascribed a new meaning**, or are discarded as nonsense if a suitable corresponding meaning is not found.
- Before processing/interpreting, **electric signals** via the five senses are simply **moving charged particles of electrons and ions** with no meaning – like the **electric current in the batteries** of smart phones.



Meaning resides in the conscious mind, not the brain: Full brain activity during sleep, but no awareness of signals from the five senses

- When a person is in **deep sleep or fainted**, all the **signals** from the five senses are still transmitted to the brain.
- But they are **not processed/interpreted** (and not turned into knowledge and information) since the **conscious mind** is retired (not at work).
- Yet, the **neural activity in the brain** does not slow down during sleep or seizure.
- Therefore, it must be the enigmatic '**conscious mind**' with cognitive abilities that makes the difference between **meaningless sporadic signals** and **meaningful information**.
- If we were to build a complete **replicate of a brain**, with all the neural firings, it would generate **no sense of awareness** and knowledge.



Subjective mental experiences with the invisible realms of thoughts, imaginations, and emotions

- When we go to **sleep**, we are **cut off** our active memories as well as the **five senses** until we wake up. A sleeping person is effectively incapacitated and unconscious. And all experiences and interactions in the sleep are of **mental nature** and are limited to those with the invisible realms of thoughts, imaginations, emotions, and unintentional access to past experiences.
- It is interesting that **inspiration** can hit a person even **during sleep**, when the five senses are retired from their daily duties and conscious access to memory is cut off.
- The subjective experiences in the dreams are often used to **solve problems**, to **make new discoveries**, and even to **conduct scientific experiments** that can be reconstructed when awake and **win the person the Nobel prize**, as happened to Nobel Lorette Otto Loewi. Of course a person must be conscious of his or her dreams and remember them after waking up.
- When awake, we remember **who we are** and our past experiences. Without the memory of past experiences and future plans, we would exist only in '**now**', which is a short-lived instant. We wouldn't know anything, wouldn't recognize anyone, and wouldn't be able to talk with anybody since languages reside in memory.
- The **experiences** in dreams and the **real world** have a lot in common since what we think of real experience of the world is actually a **virtual reality** knitted by the same mind, but with the benefit of the memories and five



Translation [&coding, digitization]:

The process of transformation of symbols from one consistent set into another while preserving meaning

- Translation of information symbols into the **binary code** of {0,1} is called **encoding** or **digitization**.
- The words written in **digitized form** are just like the words written with regular alphabet, and thus they fall under the category of **symbols of information**.
- In 1948, Shannon defined the fundamental unit of information. It is called **a bit**, which is the binary digit {0,1}.
- The 0's and 1's constitute the digital media to represent information in a **2-letter alphabet** known as the **binary code**. Using binary digits, it is possible to **encode** the information content of any message.
- In electronics, the elemental building block that represents a binary digit {0,1} is a **transistor circuit** whose open and closed states correspond to 0 and 1. This is known as 1-bit of information (1-byte contains 8 such bits).
- This made it possible to build machines called **computers** that can physically recognize bits, behave logically, and **process** information (called **computation**).



The movie ‘The Matrix’:

What is the **basic fabric** of existence? Does information form the very **core of existence**?
Is information **primary** (more **fundamental** than matter/energy itself)?
Is the universe a giant information-processing digital **computer**? Is **reality** just an animation of information?
Are we just **holographic images** rendered by computers? Is the worldview ‘**digital philosophy**’ plausible?

- Recent **holographic** vivid 3D images of people appear indistinguishable from the **real ones**. This is reinforcing the notion that even our solid 3D physical universe is an **illusion**.
- After all, the **solidity** of objects appears to be more of an illusion rather than the result of a dense matter content since **99.99999999996%** of a hydrogen atom is empty space, and what we sense as physical is nearly **empty space**.
- The notion that everything in the universe, including us, are **holographic computer simulations**, as in the movie ‘The Matrix,’ is intriguing.
- But many find the **simulation theory**, which posits that the physical realm is a simulation with **qualities** as **preprogrammed features**, implausible since it shifts the

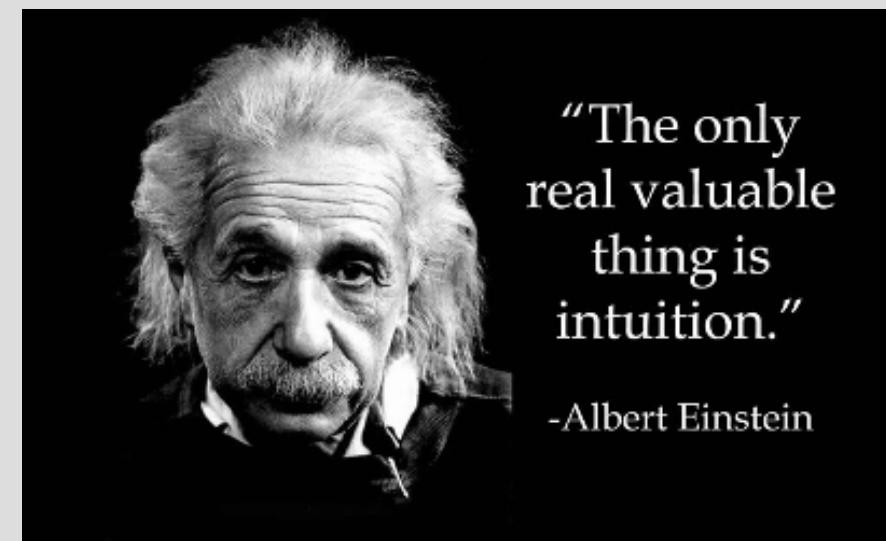


Some **attribute** syntax/symbols **deity-like attributes** – like global consciousness, purpose, knowledge, and power. But ‘**bits**’ are nothing more than the letters of a 2-letter {0, 1} alphabet. As mere inept symbols, they simply represent information.

Intuition:
A major source of information

A mechanism of acquiring knowledge ('mental' perception rather than 'physical')

- Knowledge generated by the conscious minds is mostly related to (1) **physical perception** of the outer visible or physical realm, which is probed and perceived by our **five senses**.
- Other sources of knowledge are (2) **mental perception** and (3) **testimony**.
- **Testimony** involves the **knowledge of others** and refers to the vast information out there generated by others and represented by physical symbols. **Internet** made accessing information easy, bringing the world of information to our fingertips.
- **Mental perception** is the mechanism of acquisition of knowledge that involves a reflective inward look, called **introspection**, and thus the perception of knowledge from the **subjective or nonphysical realm** – such as the state of one's own **mind**, **emotions** (like being hungry or feeling happy), **thoughts** (reasoning, planning), **memory**, **instinct**, **intuition**, and **inspiration**.
- Of these, **intuition** constitutes a major part of introspection, which is the direct perception of knowledge from the subjective realm. Unlike **reason**, intuition does not involve a recourse to thought or analysis.
- The related phrase **instinct** is usually reserved for innate tendency toward a particular behavior.
- Einstein: "*There is no logical path to these [physical] laws; only intuition, resting on sympathetic understanding of experience, can reach them.*"



Inspiration:

A special kind of intuition which involves the mind being directly hit by crisp thoughts/ideas

- Everybody experiences **instinctive knowledge** which comes **out of nowhere** as conceived thoughts, ideas, values, or visions. Even **discoveries** are instinctive.
- This is not surprising since **both the mind** of people and the **meaning of information** are **nonphysical**. As such, they don't need a physical intervening medium to interact.
- In **dreams**, the mind interacts with the **nonphysical realm at large directly** without the intervention of the five senses.
- We seem surrounded by an **invisible ocean of ordinary and original thoughts**, and the invisible minds are continually **interacting** with that ocean without an intermediary, witnessed only by consciousness.
- It is astounding that the **human mind** can **innately access abstract thoughts**, including the secrets of the abstract machinery of the universe, that are so relevant to our livelihood and understanding of the external world.
- **Mining original thoughts** and knowledge generation has become the hallmark of modernity and progress in this age of information.
- We critique or reason the **thoughts** that fall into the **radar screen of the mind**.
- **Thinking** is the process of **fishing** with the fishing rod of **attention** for the grandest fish of original thought in that virtual ocean.
- The original knowledge that stems from inspiration is often much more important than the knowledge due to physical perception or testimony.
- A person with a strong sense of inspiration is considered a **gifted person**.
- Most **patents** and **technological inventions** are the outcomes of inspirational knowledge.
- That's why **imagination** and **creative thinking** are so important in this **age of information**.
- **Einstein**: '*Imagination is more important than knowledge.*'
- Some **inspired** knowledge, thought, or idea is so profound that people often label it '**a stroke of genius.**'

The otherworldly Platonic realm of ideas: A virtual world of ideas and knowledge to be perceived by the mind and the heart

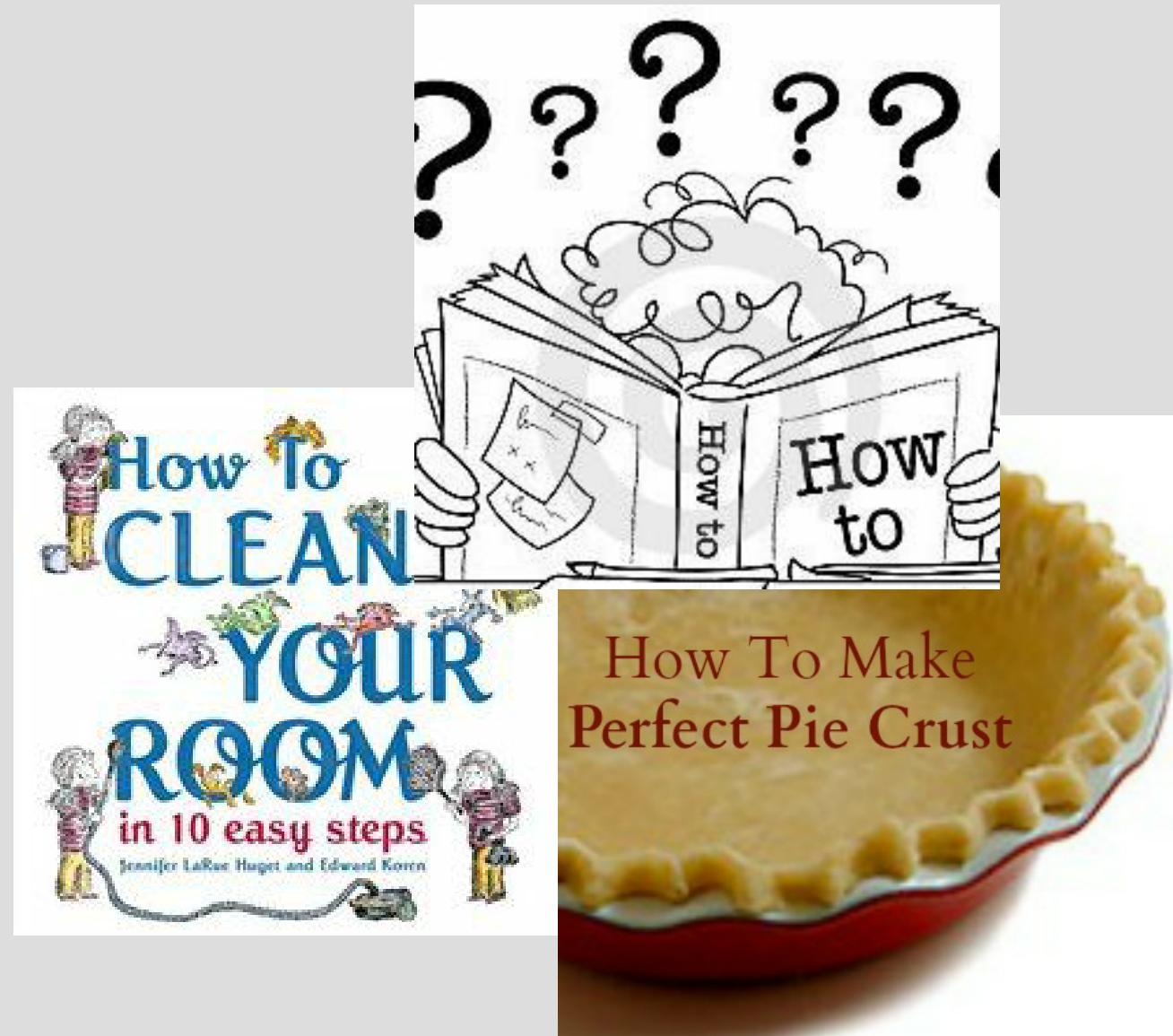
- It appears that there exists an abstract Platonic world of ideas, and that the human mind possesses a quality that allows it to access the Platonic realm of ideas and acquire information from it.
- The mind serves as an intermediary between the physical realm and the subjective Platonic realm of ideas.
- Through this intermediation of the mind, the potential abstractions residing in the Platonic realm are actualized or manifested in the physical world.
- The notion of an otherworldly realm of ideas dates to ancient Greeks: "*The conception of an abstract, eternal world, revealed to the intellect but not to the senses, finds a new expression in Plato's notion of a perfect realm of ideas and forms. His vision of these abstract entities yields both an ontology and an epistemology: Platonic ideas are not constructs of the human mind and the belief in their objective nature implies the existence of a domain of reality harboring them, a third realm next to the physical world perceived by the senses, and the inner thought world of consciousness. True knowledge is only attainable because of the mind's ability to access this otherworldly sphere, and thus any empirical evidence must always be prone to fallibility.*"
(Glattfelder J.B, 2019).
- Similarly, the subjective heart can be viewed as the center of sensing and experience of extrasensory perception of emotions instead of thoughts and ideas.
- An integral part of the subjective heart is conscience, which seems to be the center of knowledge related to morality, ethics, beliefs, values, and judgements of right or wrong.

Information:
A knowledgeable skilled agent or a pile of ignorant inept symbols?

Does information have causal power and intentionality?

Confusing information with a ‘powerful informed agent’ (Correlation is not causation)

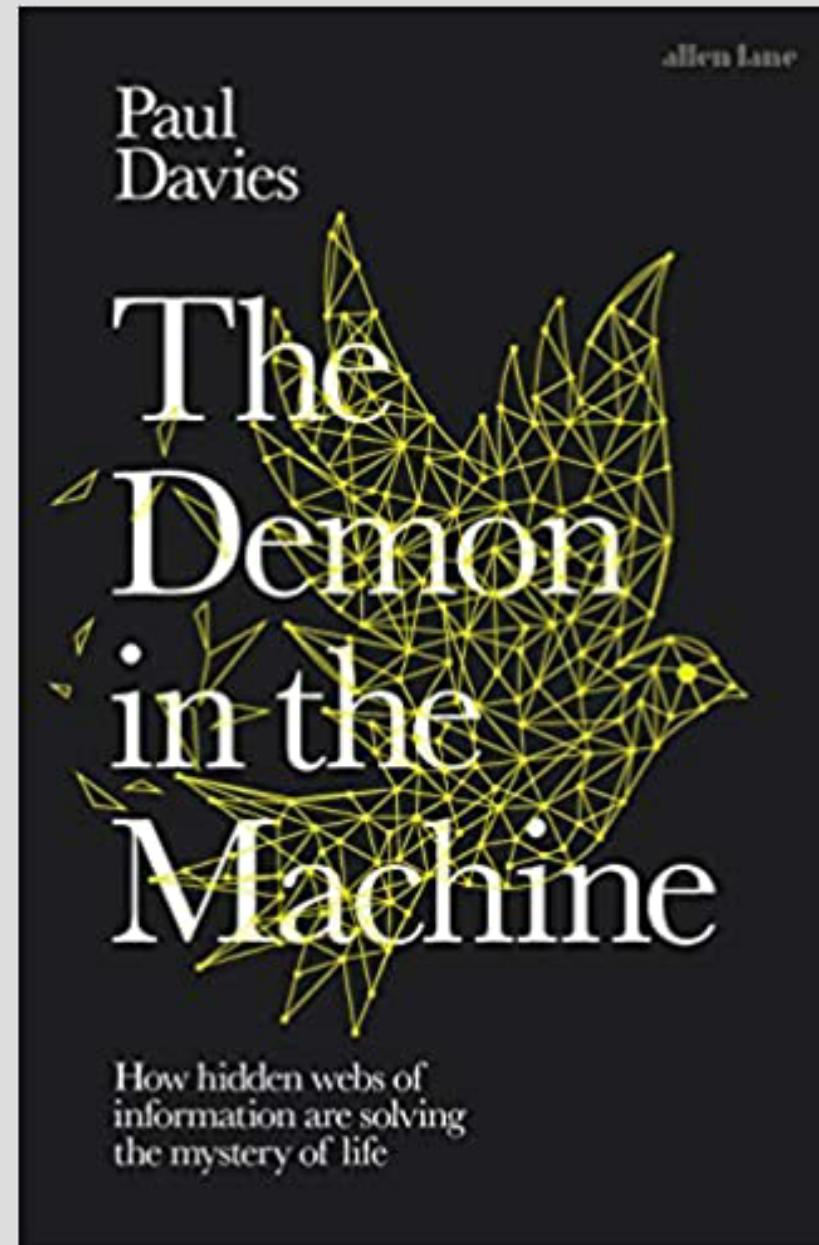
- Information is often presented as an **agent** with the capacity to **inflict change** and **organize matter**.
- Example: “*information is defined operationally as possessing the capacity to organize a system.*” (Stonier, T., 1997).
- Information is **not an active agent** or an **engineer**, and it has **no capacity to organize** a physical system.
- Information **does not** and **cannot** have **causal power**.
- The information that **too much salt is bad** for you does not have the power to stop people from eating too much salt.
- The information in **how-to books** does not have the ability to do or build anything.
- The information in a **cookbook** cannot cook any meals.
- This is because information does not have a **will**, **knowledge**, **skill**, and the **power** to dictate matter into certain formations.
- The **power of information** comes from the minds that understand its meaning and act accordingly to it.



Physicist/astrobiologist Paul Davies on information as active agent: “The thing that separates life from non-life is information”

- “The unifying concept that underlies this transformation is **information**, not in its prosaic sense but as an **abstract quantity** which, like energy, **has the ability to animate [give life] matter**.
- **Patterns of information flow** can literally **take on a life of their own**, surging through cells, swirling around brains and networking across ecosystems and societies, displaying their own systematic dynamics.
- It is **from this rich and complex ferment of information** that the **concept of agency emerges**, with its links to **consciousness, free will** and other vexing puzzles.
- It is here, in the **way living systems arrange information** into organized patterns that the **distinctive order of life emerges** from the chaos of the molecular realm.”

LIFE = MATTER + INFORMATION



Can symbols of information act as knowledgeable agents?

The physicalist worldview in disguise

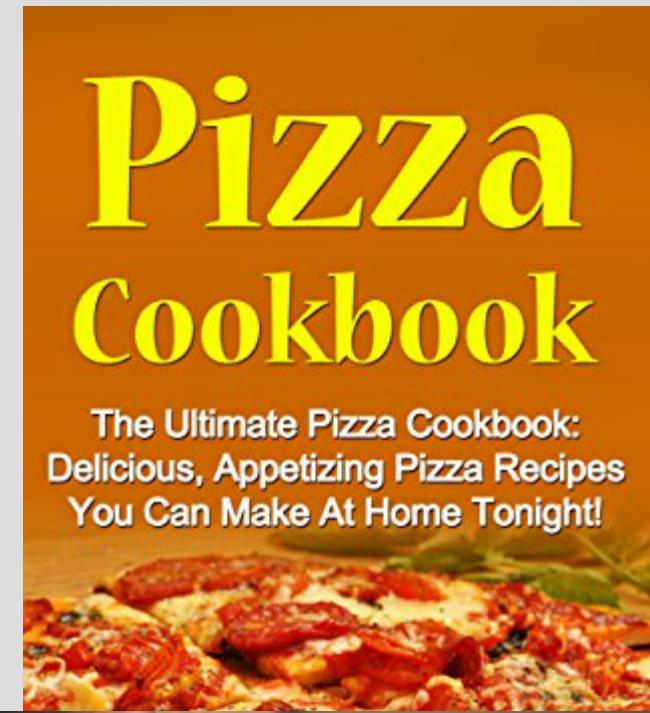
- Symbols of information such as the written words and the 0's and 1's in digitized media are often presented as a powerful and knowledgeable agent which:
 - reads the information,
 - understands it, and
 - skillfully applies it to organize matter.
- That is, information is portrayed as an enigmatic agent with intent, knowledge, skill, and power which subjugates matter.
- But this is just an overactive imagination running wild, or a desperate ideological attempt to assign the attributes of a conscious, knowledgeable, and able being with intention to inept patterns of matter or energy to justify denying the existence of a subjective mind.
- Behind this notion lies the physicalist world view, which is an ideology and has nothing to do with science based on objective observations, experimentations, confirmations, and repetitions.
- Information should not be confused with a knowledgeable and conscious living being.
- Information is not an agent; it can only be an attribute of an agent.
- Information can be used by an active agent with intent, knowledge, and power as a template for change, but information itself has no intent, knowledge, or power to initiate and cause change.



Pizza recipe:

Just a set of instructions (symbols of information); not a knowledgeable chef with intent

- A **pizza recipe**, for example, merely represents information on how to make a pizza.
- The recipe has **no ability to read the instructions** on how to make a pizza and understand them, **act** on the instructions, and make a pizza out of the ingredients nearby by organizing them.
- Although the **recipe** is information, it has **no knowledge** of making pizza since it does not have a conscious mind. In other words, the **recipe** does not know anything.
- Also, the recipe **does not have any power** and thus it cannot order the ingredients to move around and take positions as prescribed in the instructions.
- It takes only a conscious being who can **read and understand the recipe** and who has the power and **skill to command over the ingredients** and assemble them in the form of a pizza and then place it into a hot oven.
- We owe the pleasure of enjoying pizza to an **external conscious mind of an able being**, like a **chef**, whether we see him or not.
- The simplistic linear thought that pizza is made only when a recipe exists and thus the **recipe somehow must have causal power** and thus it must be the maker of pizza is plain ludicrous.
- We cannot have pizza **without an oven** either, but no one with a sound mind would suggest that the oven is the maker of a pizza.



Set of blueprints of a building:

Just symbols of information; not a knowledgeable and skillful builder

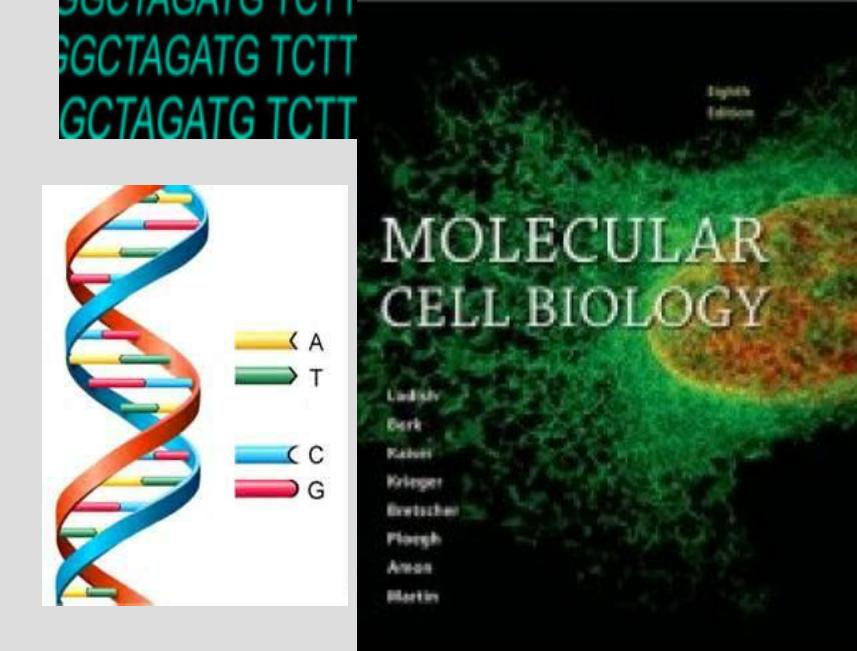
- The information in the **blueprints** of a building cannot even move a single brick, let alone executing the construction of the entire building.
- It is the **conscious mind of the project manager** with intent, knowledge, and power that can implement the construction of the building using the information on the blueprints as templates.
- The observation that a **building erects as prescribed on the blueprints** does not mean that the information on the blueprints is an active agent with purpose, understanding, imagination, intelligence, and power to affect things – even if all the workers and machinery are invisible.
- A **set of blueprints** may have all the symbols of information needed to build a house, a car, or a plant. But those symbols of information, which manifest as **meaningful information in conscious minds**, has no causal power, no purpose and no understanding.
- Nothing will happen if we **bury the blueprints of a house** in soil rich with house-construction materials, or **submerge the blueprints of a car into a large pond** rich with the raw materials used in the construction of a car.
- The information represented in the blueprints will be **embodied** only when an intelligent mind with the ability to **understand the blueprints** and with the power and skill to move and manipulate the construction materials is involved.



Genes: Written instructions (recipes) for composing proteins

DNA: The grand cookbook of all such protein-making recipes

- DNA is a **symbol** that represents information, like the blueprint of a building.
- The DNA molecule has no more purpose, understanding, imagination, intelligence, and power than a **pizza recipe**.
- Therefore, it is absurd to think that the DNA is the **powerful construction manager** of the body of a living being.
- After all, the genetic letters on DNA are also made of the same inept atoms of **carbon, hydrogen, oxygen**, etc. as the ink used in the cookbooks.
- The only difference between the two is that a recipe in **English** is written with an **alphabet of 26 letters** whereas a DNA is written with an **alphabet of 4 letters** of A, C, G and T.
- Just like any other chemical molecule such as glucose, the **DNA molecule** has no **awareness** and comprehension of the information it represents, and no power to dictate other molecules in a cell.
- The marvelous **mind-boggling acts** of DNA like **reading instructions**, building task-oriented biorobots by following the assembly instructions and assigning biorobots specific tasks must originate from an **agency of life**, not from the **inept letters** on DNA.
- A **cell** exhibits a lot of information, as expressed in **cell biology textbooks**. But that information is **not the agent that governs** the millions of intricate processes occurring simultaneously in the cell every second.



Traffic signs: Just symbols of information; NOT powerful agents

- A **STOP sign** on a roadside is just a sign – a **symbol of information** associated with the meaning ‘stop the vehicle.’
- It is NOT a powerful agent with the **intention and ability** to stop moving vehicles.
- The STOP signs **evokes** the corresponding meaning in the minds of the drivers that perceive that information by their sense of sight, and the **drivers** as the active agents brake and **stop** their vehicles.
- If a **driver** fails to see the **STOP sign** or decides to ignore it, there is nothing the **STOP sign** can do to stop the vehicle.
- The poor **STOP sign** has **no idea** of why it keeps standing on the roadside, and why the drivers are stopping when they see it.



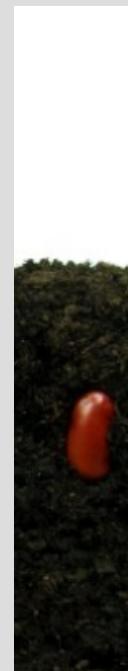
Orange tree vs. iPhone tree: Bury the blueprints of iPhone in silicon-rich soil, and watch an iPhone tree grow?

- If an **orange seed** is buried in soil rich in nutrients and water, an orange tree will grow and yield oranges.
- **No iPhone tree** will grow by burying the **blueprints** of iPhone in soil rich in silicon, metals and inorganic materials.
- The mysterious '**agency of life**' is the difference between a **set of instructions** to build something, and actually building it according to the instructions.
- **Without life, a DNA is an array of millions of letters** like the letters in an ordinary book with no power to act as an active agent with purpose, will, knowledge and power.



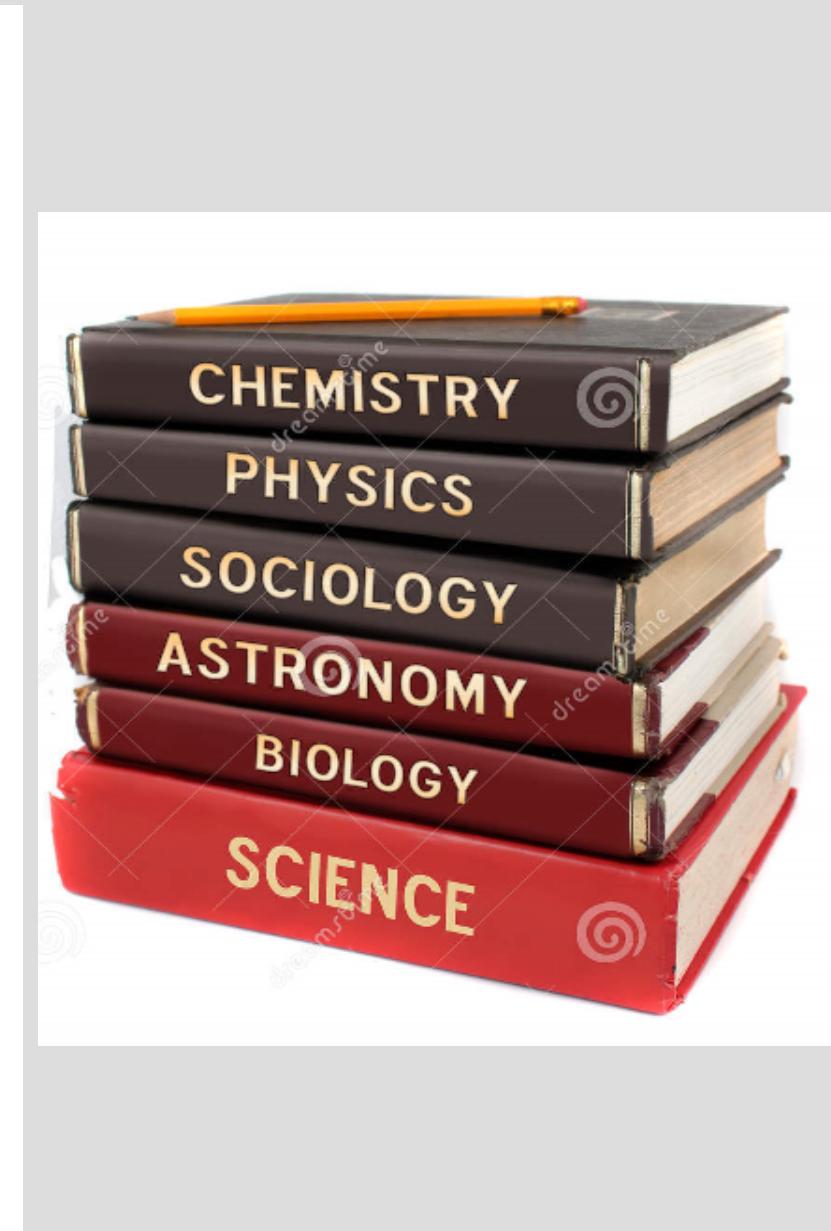
Natural seed vs. man-made exact replica of it: Mysterious life is an active agent; but information is not

- Nothing will happen if we **artificially** make an **exact replica of a seed** and bury it in soil.
- Atom-by atom, the **man-made artificial seed** may be the exact copy of the natural seed, but when **both are buried in soil**, the **natural seed** starts to **germinate and grow**.
- The artificial seed, on the other hand, will just sit there and rot, although it has the same **exact symbols of information** and thus represents exactly the same **information** as a natural 'live' seed.
- Obviously the enigmatic 'life' is an **active agent**, but information is not.



Intentionality: Information is NOT a purposed agent

- It can also be argued that information does not and cannot have **intentionality**.
- Information can only portray the **intention of the provider and user of information**.
- This is because information is **not a conscious entity**, and thus it does not and it cannot understand itself.
- Information is **not even aware of itself**.
- Obviously, it cannot attempt to do anything with something it does not know exists.
- Only conscious beings can have **intentionality**, which limits intentionality to humans and to a certain extent to higher animals.
- As such, information **cannot initiate** things, and it cannot be held responsible for acts performed by applying the information.
- Without conscious minds that **comprehend information** and act accordingly, the information alone would not entertain any ideas as to what to do with itself.
- Information about **natural phenomena** as encountered in science books is simply **inferred mental construct**. It stems from the observations of conscious minds.
- But information is **not an agent**, and these occurrences are **not the creations** of information.
- The failure to make the **distinction** between information and **natural phenomena** has caused and continues to cause a lot of **delusions**, fallacies,



A computer virus: A package of encoded information; has no intention of causing any harm

- A **computer virus**, which is a sealed package of encoded information with a set of instructions, has no intention of its own to cause damage to computers.
- After all, in the compiled machine language form, it consists of a bunch of 0's and 1's organized in a certain fashion.
- That code written on a paper by hand has the same information, but no destructive power since it is not in a recognizable (and thus executable) form by a computer.
- The virus will still not harm any computer even if its encoded form is copied to the hard drive of a computer. Because it does not have the intent to initiate any action and the power to inflict any harm.
- It takes the intentional act of a computer hacker to trick the computer user to activate the virus and to set it in motion so that the computer executes the commands in the virus.
- There are no evil information and no monstrous robots, and there will never be because of their intrinsic nature. But there are evil and monstrous people and there will always be because of the intrinsic qualities of people.
- The so-called monstrous robots do not pose an existential threat to humanity, as some suggest, but the monstrous people do. This is because robots do not have any causal power or intentionality, but people do.
- By its intrinsic nature, information does not and cannot have the intent, understanding, and power to impose itself on others. Information is simply a collection of symbols of matter and energy with meaning ascribed to it by a knowledgeable conscious being. It has no causal power and no intentionality.



Information, knowledge, consciousness, and smart machines

- The essence of both knowledge and **information** is **meaning**.
- **Information** is meaning that is represented by physical symbols such as sights, sounds, and words that can be perceived via the five senses; **knowledge** is meaning that resides in the conscious mind.
- There cannot be knowledge without consciousness since we cannot claim knowledge of anything unless we are aware it.
- The **symbols of information** are the media of representation and the means of transmission of information.
- Without the associated meaning, the mere symbols of information have no significance since meaning is an ascribed quality and not an inherent property of symbols.
- A **concise and cohesive framework for information** can be developed only on the common platform of **mind, meaning, and symbols** trio.
- When the **knowledge acquired** by a being with the capacity to know is transmitted to others via symbols, it becomes **information**.
- Seeing, hearing, touching, tasting, and smelling are senses, and so are knowing, awareness, will, happiness, desire, love, excitement, and imagination. It takes a **sentient conscious living being** to experience all these senses and to be aware of these experiences.
- Therefore, **smart machines** will continue to outperform us when it comes to processing