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# Visual Awareness

Unconscious thought  
process or not ?

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# 2020

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- ❖ In this coming new year and the end of the previous decade....let us visualize ourselves in a light that allows for visual awareness and vision to be properly understood.

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# Visual Awareness

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- ❖ Defined as the subjective sensation of *seeing* something (Searle, 1992; Block, 1995), is a simple form of *consciousness* for which a growing number of neural correlates are being proposed (Metzinger, 2000; Dehaene et al., 2001; Rees et al., 2002; Ress and Heeger, 2003; Haynes et al., 2005; Sergent et al.)

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# Discussion on Visual Awareness

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- ❖ **Seeing** ? *Does a visually impaired or compromised individual have the ability to be visually aware ?*
- ❖ **Consciousness** ? *Does an unconscious being have the ability to be visually aware ?*

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# Vision

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- ❖ The physical mechanism of eyesight (definition wikipedia)
- ❖ Vision is eyesight, something that is or has been seen or something imagined (definition yourdictionary)
- ❖ **The sense of light** , but so much more is involved.....

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# Visual components .....

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- ❖ **Visual data** is the information that is the target or stimulus
- ❖ **Visual cognition** is the understanding of the target or stimulus
- ❖ **Vision** is the sense of light , but still so much more.....

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# Visualization of Data

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**Visualization** is a general term that describes any effort to help people understand the significance of **data** or stimulus.

Patterns, trends and correlations that might go undetected in text-based or language based data can be exposed and recognized easier.

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# Visual Cognition

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- is defined as the branch of psychology that is concerned with combining **visual data** or stimuli with prior knowledge to construct high-level representations and make unconscious decisions about scene content.
- high-level vision, mid-level vision and top-down processing all refer to decision-based scene analyses that combine prior knowledge with retinal input to generate representations. (Cavanagh, P. Vision Res. 2011 Jul 1; 51(13): 1538–1551.)



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# Visualization

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for us, is any technique for creating images, diagrams, or animations to communicate a message.

**Visualization** through visual imagery has been an effective way to communicate both abstract and concrete ideas since the dawn of humanity.

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# Visual imagery

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- ❖ Is a **mental image** or mental picture is an experience that, on most occasions, significantly resembles the experience of perceiving some object, event, or scene, but occurs when the relevant object, event, or scene is not actually present to the senses.

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# Awareness ....

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- ❖ There are sometimes episodes, particularly on falling asleep (hypnagogic imagery) and waking up (hypnopompic), when the mental imagery, being of a rapid, phantasmagoric and involuntary character, defies perception, presenting a kaleidoscopic field, in which no distinct object can be discerned.
- ❖ **Mental imagery** can sometimes produce the same effects as would be produced by the behavior or experience imagined.<sup>[6]</sup>

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# Phantasmagoric

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having a fantastic or deceptive appearance, as something in a dream or created by the imagination. having the appearance of an optical illusion, especially one produced by a magic lantern. changing or shifting, as a scene made up of many elements.

Phantasma= ghost

Virtual image ?

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# Virtual image

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In optics, a **virtual image** is an **image** formed when the outgoing rays from a point on an object always diverge. The **image** appears to be located at the point of apparent divergence. Because the rays never really converge, a **virtual image** cannot be projected onto a screen.

It is not a real image.....so.....

# Screen Dependency Disorder: The Effects of 'Screen Time' Addiction

*by Healthy Holistic Living | Published on January 29, 2018*



Infants in Virtual World

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# Hypnagogic imagery

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hallucinations are imagined sensations that seem very real. They occur as a person is falling asleep, and are also referred to as sleep hallucinations. The term hypnopompic describes the period when a person wakes up.

**Hypnagogic** defines the period when a person falls asleep.

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# Hypnopompic imagery

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The **hypnopompic** state (or hypnopompia) is the state of consciousness leading out of sleep, a term coined by the psychical researcher Frederic Myers. ... When the awakening occurs out of rapid eye movement (REM) sleep, in which most dreams occur, the **hypnopompic** state is sometimes accompanied by lingering vivid **imagery**.

A nightmare is what is created upon waking.



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# Hypnopompic hallucinations

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**Hypnopompic hallucinations** are unusual sensory phenomena experienced just before or during awakening.

Their better known mirror image, **hypnagogic hallucinations**, are vivid and frightening episodes of seeing or hearing or feeling phantom sensations while falling asleep (or in early stage 1 sleep)

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# Visual Awareness

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- ❖ During **hypnopompic** hallucinations ....  
Phenomenon are visualized just upon  
awakening so are they phenomenon of the  
**conscious** or the **unconscious** ?

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# Awareness ....

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- ❖ Psychological awareness
- ❖ Mental awareness
- ❖ Sensory awareness

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# Consciousness.....

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**Consciousness** refers to your individual awareness of your unique thoughts, memories, feelings, sensations, and environment. ...

Your **conscious** experiences are constantly shifting and changing.

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# Psychological consciousness

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Sigmund Freud divided human **consciousness** into three **levels** of awareness: the **conscious**, preconscious, and unconscious.

Modern psychological approaches to understanding **consciousness** include developmental, social, and neuropsychological; each contribute a different understanding of what **consciousness** might be.

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# Self awareness

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There are **two types** of self-**awareness**. Whilst the definition of self-**awareness** is not set in stone, all schools of thought identify its internal and external characteristics.

**Self-awareness** is the clarity in which we see ourselves "internal" and also our ability to perceive how others view us "external".

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# Cognition

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the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.

Result being a **perception**, sensation, notion, or intuition.

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# What is a coma ?

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A **coma** is a deep state of prolonged **unconsciousness** in which a person cannot be awakened;  
fails to respond normally to painful stimuli, light, or sound;  
lacks a normal wake-sleep cycle; and does not initiate voluntary actions.



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# Coma patients .....

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Always assume the **person in coma can hear**.  
Hearing is usually the last sensory faculty to deteriorate when **people** are dying.

Occasionally **someone** hard of hearing in their normal state **can hear** better in their altered consciousness. ... When the **coma person's** eyes are open they may well be able to see.

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# Can coma patients see ?

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When the **coma** person's eyes are open they may well be able to **see**.

Many **patients** track movements, focus on objects, and make eye contact.

So consciousness is not present but visual awareness may be ?

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# Coma ....

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- ❖ State of unconsciousness of a being , however there may be some level of brain activity or cognition.

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# Recently ....

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- ❖ Patients awake after surgery or death experiences and recall their surroundings and exactly what the surgeons were doing.... Thus Visual Awareness of their surroundings.
- ❖ Frozen teen that survived from 15 minute freeze and a coma, came to be known as miracle on ice child, awoke and fully recovered after mothers pleas.... Possible Auditory awareness.

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# Thus...

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- ❖ The brains of **coma patients can** process sounds, for example the voice of someone speaking to them.
- ❖ **Coma patients** may not understand those sounds, and not **remember** them when **they awake**. Still, their brains may receive and process the sounds to some degree.
- ❖ What about patients under anesthesia ???

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# Anesthesia Awareness

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The condition, called **anesthesia awareness** (**waking up**) during surgery, means the patient can **recall** their surroundings, or an event related to the surgery, while under general **anesthesia**. Although it can be upsetting, patients usually do not feel pain when experiencing **anesthesia awareness**.

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# Awareness versus Cognition

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- ❖ Sensory versus higher level processing .....
- ❖ **Awareness** is the ability to directly know and perceive, to feel, or to be cognizant of events. More broadly, it is the state of being conscious of something.
- ❖ **Cognition** is "the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses".<sup>[1]</sup> It encompasses many aspects of intellectual functions and processes.

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# Back to the question....

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- ❖ Is Visual Awareness a conscious or unconscious phenomenon ?



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# Questions ?

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