



## How Human Brain Works when Engaged with Web Media

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### **Abstract:**

*Different experiments conducted by eminent researchers using various techniques where brain sends signals and how this signals react to the stimuli. Research concluded on how games and new media affect brain in the way that it increases ability to multitasking but it loses the brain power to memorize a specific task. Brain consists of three types of memory. Our brain reacts to physical environment which ultimately behaves consciously and unconsciously with the changing atmosphere. In brain we also have hardware and software that builds interaction with the brain stimuli responding to different gadgets. Our brain is limited to only web media and its digital applications. It is a study of neuroscience and psychology where neurons make up the structure of the brain sending stimuli to various part of the body and we react accordingly. We get feedback that is the neurofeedback from the brain.*

**Key words:** non-invasive technology, brain interface, Lumosity, fMRI, sense amplifier.

### **Researcher's Experiment on Brain signals**

Researchers at the University of Washington have done research and successfully sent brain signals between two humans using non-invasive technology and the internet. Two

researchers from University of Washington Rajesh Rao and Andrea Stocco tested a “human-to-human brain interface” using the internet to bridge brain signals.

In the experiment, Rao and Stocco were present on different sides of the university’s campus. It used “electrical brain recordings and a form of magnetic stimulation”. Rao’s thought was recorded via an EEG machine and the brain signal was sent over the internet to Stocco. The transmission caused Stocco, who was wearing a magnetic stimulation coil over a specific part of his brain moved his right index finger on a keyboard. The movement was like the feeling of a nervous tic.

It was exciting to watch an imagined action from brain getting translated into actual action by another brain. The researcher said in a news release. This was basically a one way flow of information from brain. The next step is to have two way conversations directly between two brains.

The University of Washington researchers work is notable since it showed human to human brain interfacing. In the past Duke University researchers have achieved brain to brain communication between two rats and Harvard researchers have achieved the communication between a human and a rat.

But while it is startling to consider the technologies potentiality researchers are cautious. Many researchers think that people will overestimate technology. A researcher named Patel said in a news release that there’s no possible way the technology that we have could be used on a person unknowingly or without their willing participation. Also the technology can’t exactly read a person’s thoughts, only certain simple brain signals. ([www.scientificamerican.com](http://www.scientificamerican.com))

In U.S e-books currently make up 15% to 20% of all book sales. ([www.dana.org/media](http://www.dana.org/media)) Even so, from laboratory experiments and consumer reports shows that modern screens and e-readers fail to read on paper.

Dr Adam Hampshire who developed the MRC tests says, it really gets to the nub of the issue which is showing

improvements on the exact tasks. By regular monitoring by Lumosity unsurprising says David Z Hambrick, associate professor of psychology at Michigan State University that brain-training games in mobile and computers are designed to tap into this ability to control attention.

## **Limitations to Brain Signals**

With limited time in today's society, people are tempted by technology to do more than one thing at a time such as driving and talking on the phone, reading e-mails while participating in audio conferences etc. New scientific studies reveal the losses in efficiency in such multitasking. Researchers find that thinking processes happen serially, resulting in delays caused by switching from one task to another. The delays become more pronounced as the complexity of the task increases. One might ask why with our incredibly sophisticated brain that uses 100 billion neurons to process information at rates up to a thousand times a second, we are still incapable of doing two things at once. The answer is emerging from neuroscience labs around the world, where scientists are using fMRI and rapid sampling techniques to reveal the pattern of brain activity over time as people read, listen, talk, observe, think, multitask and perform other mental tasks.

([www.nytimes.com/2010/06/07/technology/07brain.html](http://www.nytimes.com/2010/06/07/technology/07brain.html))

Neuroscientists are reporting new discoveries that provide insights into long-held learning theories. For example, from decades ago on the existence of short-term and long-term memory and cognitive overload now have supporting evidence from the neurosciences. Research indicates that the brain has three types of memory; sensory, working and long-term memory. The common trend in this dysfunction is the attention power.

## How Human Brain is Conscious and Unconscious

It is clear from research that synthetic brains are not as complex as our electronic ware and will not be for many years. This is the reason how human brain and technology engage in innate intelligence that leads to technological development. Today we are quite aware of the fact that organs of the body have local genetic intelligence and memory. We can consider our technological extensions as body amplifiers or sense amplifiers. Signals enter our bodies and go to our brains and minds from a new virtual and physical environment. They interface to neurological and mental structures that pre-exist. We analyze the data both consciously and unconsciously. The same structure that exists in the memory of our bodies, brains, and minds, appear in simpler forms in our digital and computer structures. They are models transferred to our artificial brains. We learn that interaction with the physical world is essential for increased connectivity in the brain an important measure of intelligence. A rich stimulus environment leads to greater physical involvement and interaction and thereby leads to greater intelligence. It is physical interaction with the world, using all the senses that foster the connections that lead to increased intelligence. There is increased interaction between users and web media. We have hardware interfaces to the physical world that allow users to engage it directly and transmit signals in real time to the media. The patterns of connections between the both are fundamental elements of the resulting intelligence.

The terms conscious and unconscious, pre-conscious ego, superego, are derived from psychoanalysis over the past 100 years. They shed light on how human and brains are engaged in the senses and make sense sorting and narrating of how to function. When building a software ideology or interacting with media or engaging the natural world, mental strategies that are used over and over again. Conscious mind according to Freud is active when we talk and think, and deals

with awareness of present perceptions, feelings, thoughts, reflections and memories and fantasies at any given moment. It is active, dynamic in the brain. Web browsers can be considered accessing shared memory available over the network. We input from our senses and become conscious of our unconscious. We can communicate consciously with the contents of the unconscious mind. There are many other concepts and processes affecting the interaction between rich media and psychology and consciousness. (Vibeke Sorensen, 2001)

### **What the research says?**

The scientific research society suggests that people's behaviour is much more a function of their social network. Humans form truly a web of unconscious reactions. All research predicts that involvement in social network or any web media is typical human condition. In the study it was observed that there is a certain style of social interaction, one can identify quantitatively and highly predictive at influencing others behaviour. One of the surprising conclusions drawn from the study was how social signalling in everyday situations dominates people's beliefs and actions. The communication abilities of human mind are limited to signalling and signs. While the mind is capable of learning new behaviours. Signals influence critical activities including negotiation, group decision making and group management. (Pentland, 2010)

### **Some examples of brain based programmes**

There are few examples of programmes which appear to have developed without neuroscientific scrutiny. Brain gym is a programme which promotes the idea that neural mechanisms can be influenced by specific physical exercises. The pseudoscientific terms explains how this works, how they express, within the domain of neuroscience. Approaches to learning are more electric mixture of ideas from neuroscience

and psychology. Concepts from psychology and neuroscience are often introduced as a means to promote and explain learning processes. Psychological evidence supports the possibility how individual preferences exist. Neurofeedback refers to monitoring of one's brain activity. Neurofeedback has helped in improving the ability. (Jones)

## **Conclusion**

Different universities are conducting experiments and research out of which new scientific studies reveal that there is always a loss in multitasking which means that when a human being surfs through internet site he or she is unable to concentrate on one focus point. Thinking power diminishes which is caused by switching from one task to another. A person downloads many files but he or she hardly goes through the whole document. This is an important aspect observed in today's life. Scientists make use of techniques like fMRI and rapid sampling to reveal the brain activity over time. Despite recent discoveries there is no doubt new discovery will continue to evolve whenever new research is conducted? Further there is always a new scope and research questions related to multimodal learning through high-tech media. Now that high-tech environment will involve e-learning in the research.

## **BIBLIOGRAPHY**

- Jones, P. H. (n.d.). *Neuroscience and Education: Issues and Opportunities*. Economic and Social Research Council.
- Pentland, A. 2010, May-June. "To Signal Is Human." *American Scientist*. The Scientific Research Society.
- Vibeke Sorensen, M. B. 2001, August. [www.creativedisturbance.com](http://vibeke.info). Retrieved April Saturday, 2014, from creative@creativedisturbance.com: <http://vibeke.info>

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*www.nytimes.com/2010/06/07/technology/07 brain html.*

(n.d.). Retrieved November 2013.

*www.scientificamerican.com.* (n.d.). Retrieved October 2013.