

Realisation of Virtual Reality

Vitual Reality Massively Multiplayer Online Role Playing Games

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Abstract—The idea of creation of a virtual world for all human beings was projected by the popular anime series *Sword Art Online* and *Log Horizon*. However the most famous example of this concept is seen in *The Matrix Trilogy*. Though a mystified concept it still holds great potential for the future. This concept was actually limited to just VRMMORPGs (Virtual Reality Massively Multiplayer Online Role Playing Games). In *Virtual World The Brain of a person* Actually connects to an online world working like a normal person in an online body whereas the real body enters a sub conscious state where vital body functions continue while the voluntary functions cease. This online connection to a virtual world is possible by hacking into the human nervous system and actually interfering with the neuron signals using a microwave headgear system to duplicate the voluntary activity desired on the online platform. The concept of virtual world holds great promises in not only the creation of artificial intelligence but also in the creation of new drone as well as medical systems. This may also eliminate the requirement of drugs for curing the incurable diseases. Still other advantages lay undiscovered due to lack of adequate amount of research.

Keywords—*virtual world; VRMMORPG; brain; signal interfacing; microwave headgear.*

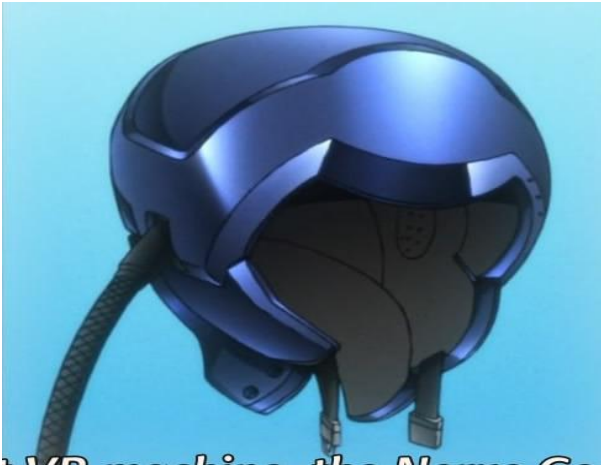
I. INTRODUCTION

Virtual Reality Massively Multiplayer Online Role Playing Games, VRMMORPG for short has been one of the most recent futuristic Sci-Fi ideas as well as the most realistic and the most researched science fiction projects. This idea has recently been resurfaced after the release of *Sword Art Online* series in 2012. The series explores the realities possible if the brain of a human is directly connected to the online network, including the negative aspects possible after the realization of a virtual world. Transferring the body activity to an online body has been already converted to a reality; however the control of the online body by a much simpler means, i.e. the brain waves is still far from materialization. This paper explores the most favoured possible idea of making a single brain live as two personalities.

II. WORKING OF THE BRAIN

The brain is made up of certain parts which are the Cerebellum, the Cerebrum, the limbic system and finally the Brain Stem. The brain actually functions through brain waves, more precisely used term for electrical pulses in the nervous system in the science fiction community. The brain waves are considered unique as not only they are unique to an individual but they are also unique to each nerve as well. No combination of frequency and amplitude of the wave pulse are common to two nerves in any case. The Brain waves in reality are the electromagnetic pulses which travel through the neurons having a frequency of about 10 to 100 Hz, which is far lower than the radio Waves. These pulses are supposed to travel at the velocity of electromagnetic spectrum. However the actual speed is much lower at about 100 m/s. This delay is because the transmission of the pulse between two neurons takes place through the synapse which is a region of very high resistivity. The signal between two neurons is transmitted via chemical agents. These chemical agents act as a key to activate the next neuron to create and propagate the exactly same signal forward as received by the former neuron. Thus the exact same signal is created by the second neuron without ever actually coming in contact with the first neuron. This serves two purpose of eliminating the signal attenuation due to contact resistive loss. This creation of exact signal can be done as the brain signal is actually a variation of number of pulses only and not the variation of frequency or amplitude. The number of pulses received per second give the strength of stimulus and the number of pulses sent by the brain determines the degree of reaction taken to a stimulus. The number of pulses reaching the synapse determines the number of chemical initiators that reach the next neuron and thus the exact same pulse is recreated by the second neuron that is transmitted further. Though this ensures an exact copy of the sent signal this also causes a time lag that appears in the

slowing of the signal down from electromagnetic spectrum velocity to the meager velocity of 100 m/s. This causes a time lag between the sensations to the reaction in the body. This time lag is not as significant as the human brain itself cannot differentiate the time lag of the almost instantaneous reaction. This inability to detect the time lag is actually of key importance in the creation of VRMMORPG.



III. VIRTUAL REALITY

Virtual reality refers to creation of world where a person can live without affecting the real body. Precisely it is an imitation of the phenomenon of having dreams, but in this phenomenon the brain actually remains fully awake whereas the body enters a subconscious state where only the body vital functions like breathing blood circulation etc keep on going and the voluntary body functions enter a comatose state. In virtual reality the brain controls two bodies without it being conscious of it. The brain is used to directly operate a virtual body created either by the user himself or by the programmer of the reality. The virtual body is internally exactly similar to a real body except that its working can be altered by programming and we can override the brain activity, which is almost impossible in the real world. Thus all the sensations and functioning of the virtual body are real because the input from the virtual body are also sent to the real brain, hence the term virtual reality. Moreover the experiences and skills in the virtual world are a part of the real memory, for example, if a person learns how to drive a car in the virtual world, his skill in driving will be brought down to the real body.

IV. NERVE GEAR

Nervegear is the name given to the link between the brain and the virtual body. It is directly connected to virtual body and in reality, is a headgear that acts as a spinal cord for the transmission of brain instructions to a virtual body. It is a microwave emitter and transducer combined with an electromagnetic pulse production system. The microwave transmitter-transducer duo is the basis of transferring the brain signals to the virtual body while the purpose of

electromagnetic pulse production system is to keep the body in the comatose state for the time the brain runs the virtual body.

A. BASIS OF OPERATION

The brain during its working state uses EM waves for transmission of signals inside the neuron while it relies on chemical initiators for synapse transmission. This EM wave not only causes the reaction in the required muscles, but also changes the instantaneous thermal map of the brain. Any change in the body is accompanied by an instantaneous change in the brain thermal map. This instantaneous change in the thermal map can be visualized by using microwave transmitter transducer system. In order to effectively understand the brain signal we prepare a predefined programme using ELECTROENCEPHALOGRAPHY and microwave brain mapping simultaneously along with a detailed visual mapping of brain cells.

B. PREPARATION OF PREDEFINED PROGRAMME

As stated the predefined programme to convert brain activity to virtual body activity is prepared by EEG, microwave mapping simultaneously and by having a detailed physical structure of the brain. The brain's electrical activity along with the thermal activity is recorded as a real body performs a number of daily as well as special tasks. This relation between the microwave thermal map of the brain and the electrical activity of the brain is obtained. Thus after this simultaneous mapping, having a thermal map of the brain is enough to fully differentiate the brain activity. The difference between the individual nerve signals can also be defined. The detailed physical structure of the brain is required to spot the synapses in the brain. These synapses are the points of neural signal delay. These points are carefully and precisely recorded. Also the brainwave nature of a person who uses the nervegear is recorded to calibrate the EM wave producer.

Authors and Affiliations

C. Working of NerveGear

Once, the relation between electrical brain activity and the microwave map is known, a recording of microwave mapping can be used to fully dictate the brain activity independently without the use of EEG. Now a virtual body is prepared through programming that follows the nervous system structure identical to a real one except that the nervous system of the virtual body is without synapses so that there is exactly "NO DELAY" in stimulus reaction. The fact that brain waves are unique for an individual does not have a role to play because the predefined programme forms a relation between the number of pulses and the position of the pulses with the thermal image and not the nature of the signals. The superposition of the brain activity causes the virtual body to function as if the brain has been transferred to the virtual body itself. Not only does the virtual body receive instructions from the brain but it also sends responses to the brain.

Now the brainwave nature comes into play .The stimulus received from the virtual body is transmitted directly to the concerned part of the brain. The EM wave production system uses the predefined program to provide the information about the stimulus to the brain. It duplicates the brainwave nature and derives the number of pulses from the predefined programme to give the same signals as that from real stimuli. Thus nervegear bypasses the entire sensory system to give the direct input to the brain .This direct input method further reduces the delay time in the real brain. That is the reason why giving direct input to brain is preferable over giving separate inputs to the sensory organs themselves.

The brain activity for voluntary actions is transmitted only to the virtual world and the brainwave signals for the real body are intercepted in between. The predetermined position of the synapses is now used. Just after the synapse a counter brainwave signal is introduced into the neuron at the moment the real brainwave signal is recreated at the neuron. The real brainwave signal and the counter signal interfere destructively to give a zero output. It is for the creation of this zero signal that the position of all the synapses and the brainwave nature are determined beforehand. Just like this the sensory information coming from the sensory organs is also stopped from reaching the brain by destructive interference before the information reaches the concerned part of the brain , i.e. it is stopped at the mid-brain .

The brainwave responsible for involuntary and vital body functions are allowed in the real body as well as the virtual body .Also the hormonal system is also allowed to function its own way in the real as well as the virtual body. However the results of stimulation from the virtual world are allowed to override the real nervous system. For example a moment of anxiety in virtual world can result in adrenaline secretion in real body as well.



V. APPLICATIONS

A. *SAVING OF REAL WORLD SPACE AND TIME*

Creation of a virtual world where an individual can visit can lead to the moving of workplaces from real to the virtual world. This leads to capital savings from construction as well as transportation. Moreover the issue of over crowdedness observed throughout the world can be dealt with. With no need of a lot of official buildings capital can be utilized for further generation of jobs. Travelling time will also be omitted away, giving way to a more punctual and friendly working environment.

B. *INTELLIGENT DRONES CAN BE MADE A REALITY*

Using the nervegear system can create bipedal drones directly in control of humans. This is achieved when a real brain drives a drone as its virtual body. Development of these intelligent drones will improve the national security system. Also the need for humans to enter a hazardous area will be omitted.

C. *A BETTER PLATFORM FOR LEARNING*

A virtual world is a better place for learning. Not just for learning new skills like swimming, driving etc moving up the education system to the virtual world will improve the educational standards a lot. It is because in the virtual world concrete examples can be given, theory can be explained practically on an ideal case. Moreover Social networking which is called the culprit for the lack of verbal communication skills can actually lead to better conversational skills as in the virtual world, verbal communication will be a necessity for socializing. It is also a fact that new skills can be developed in a much safer and easy way in the virtual world.

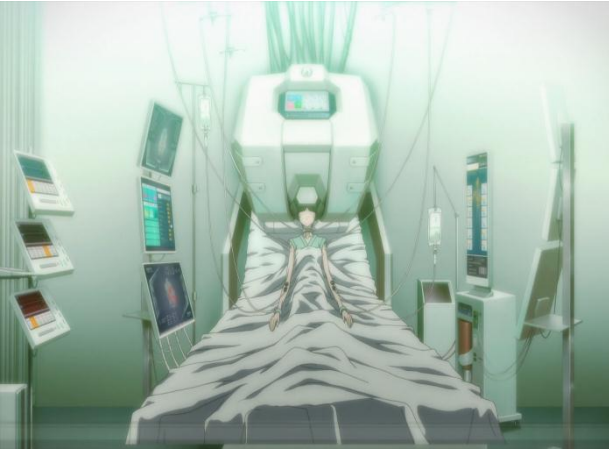
D. *A BOON FOR THE CHALLENGED PEOPLE*

Physically challenged people, who can't reach the heights of their potential just because of their handicap, will be able to do their work to their potential in the virtual world. It is also a perfect place for counseling of people with nervous problems.

For example a person with fear of water can actually overcome his fear in the virtual world in a much safer way. Depressed people can also get the light hearted atmosphere they need to overcome their state of mind. Also overriding the brain activities from virtual world may lead to cure of depression.

E. *MEDICUBOID – THE BEST TREATMENT SYSTEM*

Medicuboid refers to a specially made nervegear system that will be used to cure a lot of diseases, both acute and chronic, without the need of drugs at all.



ANIME ADAPTATION OF A MEDICUBOID SYSTEM

The functioning of the medicuboid system is concerned wholly with the overriding of brain activities. A disease

caused by hormonal deficiencies can be cured. Since everything in the Virtual world is actually in the form of programmes which can be manually changed, the same goes for the functioning of the endocrine system. The activity of entire endocrine system is mastered by the pituitary gland which is itself under the control of brain. Thus overriding the hormonal system can regularize the hormonal secretions thus curing the chronic disease. Furthermore production of Blood cells is under the control of the brain. Thus overriding the brain system authorizing the production and destruction of WBCs and RBCs we can manually regulate the count of blood cells thus curing Leukemia. Similarly a lot of other chronic diseases and cancers will have a drugless cure in the future when nervegear is made into a reality.

References

- [1] [1] [Reki Kawahara](#) Anime series „SWORD ART ONLINE” and “SWORD ART ONLINE II” by A-1 Pictures

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