

Philosophical and Sociological Aspects of the Concept of Virtual Reality Based on “Presence” and “Telepresence” Generated By the Natural and Mediated Environment

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Abstract

The concept of virtual is created most probably by the information and its processing patterns. It has become a very famous concept since the sixth decade of the 20th century due to the invention of the computer technology. Now it is familiar to us as online world. The whole world is a virtual reality and it has a long history. The concepts of virtual reality and the virtual environment are a psycho-social matter that directs to the perception and the physical world. All the perception involves information and signals present in the stimulus. But it depends on the previous knowledge, experience and expectations. The main aim of this research is to describe the philosophical and sociological aspects of the concept of virtual reality based on “presence” and “telepresence” generated by the natural and mediated environment. The main objective of this research is to describe the virtual environment and its influence on the programming of behavioral patterns and the thinking ways of the masses and how the virtual environment and its reality have manipulated masses in the social and cultural context of Sri Lanka. Research question is very important fact in this research. The following research question structured the research and managed to achieve the aims and objectives. How are the masses experiencing the mediated environment and how are they influencing on the socio-cultural changes of the social context of Sri Lanka? The research method applied in this study was based on phenomenological experiences of structuralism in order to analyze the data both qualitatively and quantitatively. I primarily rely on the ethnographic observation, technique of participant observation, technique of questionnaire, the technique of case study, etc. I observed the attitudinal aspects of the masses and study how they build their relationships with their relatives and with the other masses around them. The virtual environment of urban, rural and the estate sectors of Sri Lanka are growing rapidly. Internet cafes have been widely spread in Sri Lanka by the year 2015. It was found that, the most literate computer age group of Sri Lanka is 15-19 years. Due to these reasons, the computer literacy among the young masses of Sri Lanka is increasing considerably and its influence is very effective on the socio-cultural transformation. The research shows that the Creating Motivate Feelings (CMF = .000), Widening the Boundaries of Knowledge (WBK = .000), Increase the Sense of Time (IST = .000), Shift into Behavior of Fashion Culture (BFC = .000), etc of the masses of Sri Lanka have been changed into a virtual reality by the mediated environment. In conclusion, the man is stimulated by the information, energy and the multi-dimensional space time screen. This virtual environment has developed the organizational skills, identification skills and the skills of the interpretation. As the result of this, the young masses can understand and respond this environment. The epistemological analysis really clarifies the differences between these objective realities and the virtual realities. The philosophical analysis says that man’s world is virtual and the world he lives in could arise from a simulation. So the virtual reality of the world cannot exist independently by itself. So it depends upon the process that is link with relevant matters. If that process stops then the virtual reality definitely ceases its existence. Accordingly, the concept of virtual reality is no longer a paradoxical topic.

Keywords: *Virtual Reality, Objective Reality, Fundamental Reality, Telepresence, Naturel and Mediated Environment*

1. Introduction

The internet and the cyber technology in the present global society encourage and prepare the masses for information and entertainment. Through this environment, the masses of the society have been enforced to develop the virtual culture. Early work in the virtual environment was carried out by literature, folk lore, and by the adults of the society. But more recently the interest has been developed through the human computer interface. Particularly, the virtual reality or the virtual environment is not confined only to human machine integration. It is a psycho-physical matter that has been developing since the inception of civilization from a long history and one of the more enthusiastic proponents of the subject of philosophy. This is a process which is stimulated by the communication and media. The virtual environment requires three more distinct operations. They are:

- the shape and the kinematics of the actors and objects
- mode of interaction among the people and objects
- character and extension of behavior in the specific environment

But the components of the technological development has been a cause for the creation of the virtual environment since the early 1960s (Comeau, 1961). This global network of computer technology has augmented new avenues for the masses and has become the agent of social change and personal life of the masses (Bell, 1981; Kling, 1996; Rheingold, 1993). Thus the internet has been growing and changing the world rapidly from 1960. At present, it has been creating an e-world where everything is done electronically online. The online behavior of these masses is based on the traditions of wireless communication and is interconnected with the multimodal interactive communication systems.

Many technologies of the communication have been rapidly converging into the digital forms. This does not denote that the traditional or modern media are going to disappear immediately. The new digital form of media will coexist with conventional patterns and get converged into the new digital formats. The convergence formats of the new technology are building a larger audience for themselves. The convergence of new computer technology and the conventional mass media stand firm in the convergence structure paving the way for the new customs. But the internet is not truly a new technology for the current world. The oldest version of this has been named the Arpanet which was first deployed in 1969 and was initially funded by the Advanced Research Projects Agency Network (ARPANET) of the Department of Defense of the United States (Abbate, 1999). When the Arpanet was released from the control of the department of United States, it was spread around the world in an extraordinary speed. According to the literature, most relevant to the virtual reality or virtual environment, it is developing faster on the basis of visualization and the interaction mode of the modern computer technology.

2. The Complexity of the Concept

The new technology and its forms have radically transformed and reconstructed the traditional paradigm of communication and society. Cyberspace has been transformed into the Cyber-culture. The transformation of this technology has reformed the social settings and coined the word in order to designate each social stage (Pujol, 2004).

- Myron Krueger -1970s - Artificial Reality
- William Gibson -1984 - Cyberspace
- Jaron Lanier -1989 - Virtual Reality
- 1990s - Virtual Worlds or Virtual Environments
- 1990s - Enhanced or Augmented Reality

Though the terms have been used differently due to the development of technology, indeed it has meant the same complex reality. The high potentials of this virtual aspect of the media have been generating a multitude of responses and reactions among the masses. The masses sustain the multiple technologies as an operative medium in order to interact with one another. Accordingly, the computer technology and the social aspect of the internet have been an asset and or a detriment to the development of the society. Its potential usage can make or break the social, cultural, economic and political environment of the public sphere.

Accordingly, the virtual reality is a very fascinating concept in the modern world. According to Howard Rheingold, it is the most influential part in the social structure that is stimulated by the computer conferencing environment system and the digital created space to which humans can access (Lanier, 1992; Rheingold, 1991; Sutherland, 1968). Virtual reality is typically portrayed as a medium of an individual into a computer-generated world according to the present definitions.

What is reality? Reality is all that exists at present. It does not exist anymore in the past and future does not yet exist (Aerts, 1996). This denotes everything which appears to our five sense organs. It is any further not an unambiguous concept.

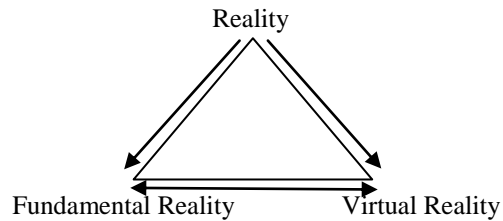


Figure 1

Virtual reality is an interactive and most immersive experience (with the feeling of presence) in a simulated (autonomous) world (Zeltzer, 1992).

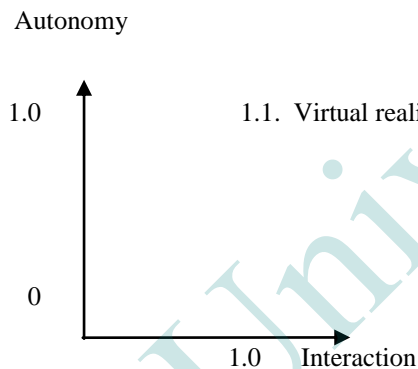


Figure 2

Virtual reality is the term that can be defined as a creation by the human experiences and the transformation of the abilities of the human body and mind rather than the technological hardware or software environment. As a result of the computer generated environment, the perception and the mental process of the masses can be automatically mediated (Gibson, 1979). It can mean the creation of synthetic experience, virtual worlds, artificial worlds or artificial reality which can be created by the immersive, multi-sensory experience (Gigante, 1993). This is created by a wide variety of applications such as architecture, arts, medicine, entertainment, sports, media, fashion, military, heritage, etc. which impact upon our day to day lives. Irrespective of the use of these applications, virtual worlds produce the sets of data which are used to develop new behavioral patterns and new ways of interaction. This ensures a very rich flow of information process from the environment to mind of the masses.

In the present world, the perception of the masses has been constructed, reconstructed and restructured by the computer generated alternative programs which are full of images and sounds. Accordingly, the perception is mediated by the physical and non-physical modern technology in this present world. The audio visual features of the modern communication technology survive the masses in the “telepresence” world. “Telepresence” has already created the mediated perception of an environment. “Presence” creates the natural perception of an environment. The “telepresence” environment is spatially or temporally distant from the real existence of the masses. This term was first coined by Marvin Minsky (1980). This tradition was continued by Sheridan and Furness adopted the “presence” rather than Telepresence referring to the generic perception of the beings (Sheridan & Furness, 1992). The concept “telepresence” has been developed further by Held and Durlach in order to mean and to refer to both the teleoperation and the experience of the virtual environment (Held and Durlach, 1992). They have highlighted their concept of “telepresence” and its similarities between the teleoperation and the virtual environments. Though the “telepresence” and the cyberspace are slightly different in two contexts, they are tightly coupled with virtual reality. The term cyberspace was coined first by William Gibson and described it as a consensual hallucination experience that is internalized daily by the billions of operators in the world (Gibson, 1983). It is the context that goes beyond the entertainment.

The masses perceive and experience the mediated environment in separate ways simultaneously. The environment presents via the medium the physical environs in which one is actually present. This environment is usually created with the help of the data, features of stereophonic video goggles and fiber-optic data gloves, etc. (Greenbaum, 1992). The current concerns, the mental processes and the perceptual experiences coming from the past contribute to generate this sense and readiness to assimilate all the sensory data (Gibson, 1966). The sensory organs can experience this distant assimilation or external factors that go beyond the limits of their organs themselves (Loomis, 1992).

The computer is a social actor and it has the social responsibility similar to the other humans in the society. But at present it has no logical clarification for such behavior (Nass, Steuer, Henriksen, & Dryer, in press; Nass & Steuer, 1993). It influences the masses through the accumulated data and presentations in order to construct the mediated society and reality. This mediated society contributes to the experiences of the masses in three ways. They are subjective personal presence, social presence and personal presence (Heeter, 1992). The computer mediated (synthetic) experience in this social context is different from the real (unmediated) presence (Robinett, 1992).

But the traditional interpersonal form of communication is different from the modern telecommunication pattern and it is the conduit between the sender and receiver. The telepresence view means the relationship between the sender, the message and the receiver and the experience they get through the mediated environment (Sheridan, 1992).

Accordingly, the new technology has created virtual space for the man in the context of modern technological advances in order to give the experiences and identities to the individuals and communities. This has equipped the man with different kinds of experiences, the social and with the cognitive skills. This virtual environment has created the virtual human. It has paved the way for the democratic utopia.

3. Methodology

In this research I concentrated on the structuralist's view of the virtual reality on the basis of the global technology. The main aim and objective of this research are to describe the philosophical and sociological aspects of the concept of virtual reality based on "presence" and "telepresence" generated by the natural and mediated environment and its influence on the socio-cultural context of Sri Lanka. I had to administer a research question in order to bring the objective into success. Following is the research question. How are Sri Lankan masses experiencing the mediated environment and how are they influencing the socio cultural changes of the social context? Accordingly, I had to administer the techniques of data collection and the methods qualitatively and quantitatively in order to come to a successful analysis of the data.

The samples were gathered from 1000 people from the island wide provinces of Sri Lanka considering its magnitude and relevancy to the objectives of the study. Techniques of questionnaire, technique interview, technique of observation, technique of case study were used to collect the data. I had to observe the attitudinal aspects, how do they build the relationships with their relatives and with the other masses around them and the behavioral patterns of the masses of the selected sample. But only one eligible youth was randomly selected from a household and interviewed. In order to examine the various factors, the three levels of analysis were utilized: forms of individual, the household and the organizational system. The method employed in this research was based on phenomenological experience of structuralism in order to analyze the data both qualitatively and quantitatively. Finally, the procedure of data analysis and interpretation was employed using the mixed method. In order to ensure the reliability and validity of the data, the empirical generalization was conducted.

4. Socio and Cultural Transformation of the Young Masses of Sri Lanka:

The reality of this virtual environment is to believe in both the physical aspect of the agents themselves and the social interaction of the users. This virtual environment has been programming the behavioral patterns and the thinking ways of the humans and has manipulated them to engage in or disengage from the interaction. Through this relation, the masses have already been transported into a different world. The substitute reality that has been created by the modern technology induces the masses to interact with the new imagination of the virtual human. Accordingly, the digital formatted virtual environment of Sri Lanka has led the masses into a new environment. This fully immersive virtual environment (IVE) has changed the perception of the masses and the physical spaces.

We can identify those and understand how they contribute to induce the sensory organs and perception of the masses to bring about changes in themselves.

- Control of their senses in relation to the existing environment
- They get the information and experiences
- They modify the mental and physical environment suitable to the virtual environment
- They construct virtual based degree of autonomous

Through these experiences, the virtual humans can express different kinds of social skills and can perform actions which are very relevant to the virtual environment. Virtual environment influences the behavior patterns and the moods of the masses. Sri Lankan masses are very conscious and focus their attention on the feelings that are altered by the mediated environment rather than in the immediate physical environment. Virtual environment stimulates all our senses. But the modern technology has been prioritizing the visual and audio components for the perception of the masses. But in the last two years it has been incorporated into the user's sense of touch. This interaction can be introduced as the haptic system.

The computer generated virtual environment of Sri Lanka is growing rapidly. By the year 2015, the computer is available in 24.6% of the households of the country. Forty-two percent of them are in the urban sector, and the rural and the estate sector represent 22% and 5.4% of them, respectively (Table 1). Internet cafes are widely spread in the urban and the rural sectors in Sri Lanka.

Table 1 Percentage of the computer owned households in Sri Lanka – 2015 during the first six months - %

Country and Sector	Desktop %		Desktop & Laptops %	
	2014	2015	2014	2015
Urban Sector	25.8	23.2	35.8	42.0
Rural Sector	15.3	14.4	20.4	22.0
Estate Sector	2.7	3.9	4.6	5.4
Sri Lanka	16.6	15.4	22.4	24.6

(Source: Computer Literacy Statistics – 2015)

Table 2 Computer literacy rate in Sri Lanka – 2015 during the first six months - %

Sri Lanka	2014	2015
Urban Sector	34.6	40.3
Rural Sector	23.8	24.9
Estate Sector	6.2	7.8
Sri Lanka	25.1	26.8

(Source: Computer Literacy Statistics – 2015)

The computer literacy rate has been increased among Sri Lankan masses by 1.7% from 2014 to 2015 during the first halves of the years (Table 2). Computer literacy rate is higher among the male (28.7 %) than among the females (25.1 %) of the country. The internet is used more widely by the young people representing the age group of 20 - 24 of the household population in Sri Lanka. In the light of the modern research conducted by scholars, it has been received that people of the age group 5 – 69 also access the internet to a great extent. Most probably this computer skills and literacy constructs the perception of the masses to see the arts beyond from technology through the 3D software based environments. At the current stage this Tele - presenting art forms have been redefining the Sri Lankan society and industry. Through these visual performances, the eye-pleasing surroundings have been constructed. This virtual environment can be considered as an art form, techniques and effective persuasive factor as well as an ideological apparatus in this modern era. Accordingly, virtual reality depends on live and realistic nature of the output of visual forms of “Presence” and “Telepresence” generated by the natural and mediated environment. The virtual environment is widening the boundaries of knowledge (WBK) and restructuring the emotional life of the masses. This experience has already constructed very precisely as visual and auditory perception (literalism of perception) in the mind of the masses. As the result of this familiarity, the masses can decode the metaphors of the contents of literalism brings by this mediated environment.

The virtual environment is very powerful to increase the sense of time (IST) of the masses on the programs. Each family of Sri Lanka has their own way of using time. Accordingly the Masses have to adapt to their family setting. Now the masses bring their own temperament or personality to the family, adding another voices and experiences. For an example, the melodic and harmonic aspects of enthusiastic music of jazz improvisation assume lot of time. Consequently, individual's experiences may be affected by these factors coming from the global phenomenon.

Virtual environment encourage and shift the masses into the fashion culture (BFC). Fashion reflects always culture and society of any country. Cultural and social phenomenons of Sri Lanka have already been affected by the types of fashion processes, generated by the mediated environment.

The perception of virtual reality is more akin to businesses, culture, fashion, economy, media, technology, etc. All of us have been aware, the masses do not exist mostly in reality but they live in the world of fantasy. Accordingly, the lives of the masses of Sri Lanka have been increasingly sophisticated by the virtual environment.

The result of the Telepresence nature of the mediated environment of the masses of Sri Lanka is as follows. (Table 3)

Table 3 Profile of computer usage

Variables	Chi-Square	Asump.Sig
Creating Motivate Feelings (CMF)	955.250**	.000
Widening the Boundaries of Knowledge (WBK)	941.780**	.000
Increase the Sense of Time (IST)	1155.150**	.000
Shift into Behavior of Fashion Culture (BFC)	26.472**	.000

** $\alpha = <.01$

According to the above results, the young generation can gain access to the virtual games, virtual training (Ketagoda, Siriwardana & Rajapaksha, 2012), virtual machine, virtual tour (Wijesuriya, Mendis & Bandara, 2013), virtual server, virtual worlds, virtual events (Dhammika & Ariyaratna, 2015) virtualization process, virtual storage, virtual education, virtual learning environments (Gunathunga, & Hewagamage, 2015), virtual office and virtual computing environment, virtual banking (Ariyawansa, 2014), E – commerce, virtual life, etc.

Due to the virtual pattern of the young peoples of Sri Lanka, the kinship type of families, interdependence resulting from the specialization of work and the complementary among the people, education, religious training and the whole lifestyles have been changed into an organic solidarity. The young people's pattern of social cohesion, norms of existence of the masses, different values and interests (cultural products), the intensity and content of the collective conscience has been changed from traditional type to a western pattern as a result of globalization. The telepresence environment of Sri Lanka is totally based on the western pattern and on the technology and on software coming from some other countries. This technology and the ideology have motivated the masses for the global consciousness. This has changed the attitudinal and behavioral patterns of the masses, and has created many job opportunities to the young masses of Sri Lanka.

The capacity of the computer literacy creates and acquires the knowledge in order to obtain opportunities offered by the process of globalization. The knowledge of the information and communication technology and, the knowledge of economy of the high school children and the school leavers of Sri Lanka are highly essential for the well being of the future masses of Sri Lanka.

However, there is a dynamic interaction between computer and users which help them make the world wider than what was created by the traditional media. Computer is a resource or a device that people can utilize, in varying degrees, to help them make sense of the current affairs. Computer can never operate alone but with the creative agency of users.

5. Conclusion

The virtual reality is a human concept that exists worldwide. It has a long history. Lord Buddha says that the whole world is an illusion. Hinduism says that the world has been created by the God. Plato explained that the world is like a shadow. Virtual reality is a creation which is operated by the information and its processing. This concept has as its basis the presence, telepresence and virtual environment. The virtual environment consists of virtual objects, virtual students with different kind of social cognitive skills, virtual computer technology, internet, etc. The virtual environment treats and motivates them as social partners. This demonstrates both human-human and human-machine social interactions. The process of visualization activates human perception more than the other senses of man. These different types of virtual reality systems can exert the different influences on the people's mentality modifying by the existing mechanism. At present Sri Lankan young people are adhering into the virtual environment than ever in the past. For example, the young people are playing mostly the brutal games in the computer and with the internet. This may influence them and identify themselves with the virtual heroes and imitate them resulting in immediate aggressive behavior. Technological aspect of the virtual reality is sometimes alarming us, consulting a threat to the society. But social virtual worlds are allowing the masses to communicate and collaborate for the development of the society. The above result shows that the sense of time, cultural patterns, knowledge, relations, kinship order, social order, fashion, etc., of the masses have been changed by the virtual environment. Job opportunities have been increased among the young masses of Sri Lanka. The above results express that the developments of the virtual world and its traditions have been immensely influenced on the daily routine of the masses. The customs, traditions the language and its patterns, the material artifacts, and the entire body of the legends, myths, beliefs and all the other behavioral patterns brings by the computer world have already led to formulation of a modern man.

6. References

- Aerts, D. (1996). Relativity theory: what is reality?, *Found. Phys.*, 26, 1627-1644.
- Abbate, Janet. (1999). *Inventing the Internet*. Cambridge, Mass: MIT Press.
- Ariyawansa Chundika, (2014). Re-shaping Banking Through Social Media in Sri Lanka – Important Lessons to Learn from Other Countries, *26th Anniversary Convention*. Sri Lanka, Sampath Bank PLC.
- Bell, D. (1981). The Social Framework of the Information Society, in T. Forester (ed.) *The Micro-electronics Revolution*. PP. 500–49, Cambridge, MA: MIT Press.
- Comeau, C. P. & Brain, J. S. (1961). Head sight television system provides remote surveillance, *Electronic*. November 10, 86-90.
- Computer Literacy Statistics*. (2015). First six months, Department of Census and Statistics, Sri Lanka.
- Dhammika, K. V.P., Ariyaratna, W. R. C. and Liyanapathirana, V. N. (2015). Effects of Aerodynamics in Virtual Reality Sky Diver and Parachute Jumper Training Simulator for Sri Lanka, *Proceedings of 8th International Research Conference*. Sri Lanka, Kotalawala Defence University, 64 – 68.
- Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.
- Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston: Houghton Mifflin.
- Gibson, W. (1983). *Neuromancer*, New York, Berkley Publishing group.
- Gigante, M. (1993). *Virtual reality: Definitions, History and Applications*. "Virtual Reality Systems". Academic-Press.
- Greenbaum, P. (1992). The lawnmower man. *Film and video*, 9 (3), pp. 58-62.
- Gunathunga, Chathuri and Hewagamage, K. P. (2015). Implementation of Integrated Virtual Learning Environment Model for Schools with Limited Resources for Online Learning, *International Journal of Soft Computing and Engineering (IJSCCE)*, Vol: 5 (1), 15 – 18.
- Heeter, C. (1992). Being there: The subjective experience of presence. *Presence: Teleoperators and Virtual Environments*, 1(2), 262-271.
- Held, R. M., & Durlach, N. I. (1992). Telepresence. *Presence: Teleoperators and Virtual Environments*, 1(1), 102-112.
- Ketagoda, D. R. S., Siriwardana. T. C. A., Rajapaksha, S. A., Perera, P. K.,D., Abhayasingha, N., Wijesundara, M. N., (2012). Adrs Virtual Reality Cricket Trainer, *SAITM Research Symposium on Engineering Advancements (SAITM – RSEA)*. 19 – 22.

- Kling, R. (1996). 'Hopes and Horrors: Technological Utopianism and Anti-Utopianism in Narratives of Computerization', in R. Kling (ed.) *Computerization and Controversy*, pp. 40–58. Boston, MA: Academic Press.
- Lanier, J., & Biocca, F. (1992). An insider's view of the future virtual reality. *Journal of Communication*, 42, 150-172.
- Loomis, J. M. (1992). Distal attribution and presence. *Presence: Tele operators and Virtual Environments*, 1(1), 113-119.
- Minsky, M. (1980, June). *Telepresence*. Omni, pp. 45-51.
- Nass, C., & Steuer, J. (1993). Computers, voices, and sources of evaluation. *Human Communication Research*, 19(4), 504-527.
- Pujol Laia, (2004). Archaeology, museums and virtual reality, *Revista Digital d'Humanitats*, Vol: 06, 1 -9.
- Rheingold, H. R. (1991). *Virtual reality*. New York: Summit Books.
- Rheingold, H. (1993). *The Virtual Community*. Cambridge, MA: Addison-Wesley.
- Robinett, W. (1992). Synthetic experience: A proposed taxonomy. *Presence: Teleoperators and Virtual Environments*, 1(2), 229-247.
- Sheridan, T. B., & Furness, T. A. (Eds.) (1992). *Presence: Teleoperators and Virtual Environments*, 1, 1. Cambridge, MA: MIT Press.
- Sheridan, T. B. (1992). Musings on telepresence and virtual presence. *Presence: Teleoperators and Virtual Environments*, 1 (1), 120-126.
- Sutherland, I. E. (1968). A head mounted three dimensional display. *Proceedings of the Fall Joint Computer Conference*, 33. 775-764.
- Wijesuriya, M.U.E., Mendis, S.U., Bandara, B.E.S., Mahawattage, K.P., Walgampaya, N., De Silva, D., (2013). Interactive Mobile Based Tour Guide, *SAITM Research Symposium on Engineering Advancements (SAITM – RSEA)*, 53 – 56.
- Zeltzer, D. (1992). Autonomy, Interaction, Presence. *Presence*, Vol. 1, No. 1, pp. 127-132.