Conceptual and Perceptual Perspectives of Virtual Reality

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Abstract: The present paper deals with a discussion on conceptual and perceptual perspectives of virtual reality which is very relevant topic in the present day scenario. Generally, the world of virtual reality is considered as a world of imagination or illusion which creates an artificial situation or environment that seems to be like reality, but not actual reality. But, today, the virtual reality is not only considered as a natural outcome of advanced computer technology, but also regarded by the users as a useful tool for different services in an acceptable and significant manner. In the field of systematic research on the virtual reality, we often observe that many philosophers in their recent trends try to create their interest on the topic and wish to open the door to explain how the epistemology and metaphysics are related to virtual reality, and aim to find out the bridge that will over-come the gap between conceptual and perceptual realms of virtual reality.

Keywords: appearance, reality, virtual reality, conception, perception, illusion, application

Introduction:

In modern usage, the topic "virtual reality" is considered as an important subject-matter in the study of computer science, especially in the field of software engineering. Indeed, the present age is known as the age of machine or the age of computer. After an exceptional revolution of information technology, we observe that many computer programmes under technological progress are neither controlled nor governed by the natural phenomena of physical world, but these are controlled by the specific form of technology and an artificial situation. Modern scientists have created a new artificial world of possibilities that is called 'the world of virtual reality'. This world is an illusion of 3D space where user can control it to move around and interact with the artificial object that is represented to be real in the virtual environment. Generally, computer scientists are able to control this situation through their technological experiences, and very often claim that the virtual reality is only a matter of technology or an outcome of technological progress which faces some practical challenges behind the theoretical framework as it is technically designed by them in contrast to actual reality. In the domain of artificial environment, the user of computer believes that virtual objects can be real in a specific event, because the virtual objects such as avatar, in

the perception of user, are apparently real. But, these are real only in appearance, not real as it is in the physical world. Then, how can the objects of virtual reality would be real in the actual world? Or, why do we consider them as real? If it, as we know, is not actually real, why does the user feel that he/she has entered into a real situation? Or, how do the artificial situations convince the user's brain to take this fictional reality? However, the philosophical discussion on the virtual reality including the above problems is sometimes considered as a less important matter to the computer scientists, yet some contemporary philosophers strongly claim that virtual reality is not totally free from its theoretical background.[1] For virtual reality, the modern technology provides a system which plays with our senses to any artificial world that we can imagine. In fact, modern scientists have invented a special form of technology by which human imagination can be represented in a form of virtual reality. But behind this representation, we have to admit the epistemological as well as ontological aspects that can define it very theoretically. From the perceptual point of view as well as on the basis of ontological study of reality, we can distinguish between reality as actually real and reality as virtually real.

Reality behind the Appearance:

We can say without any doubt that epistemology and ontology are the two main branches of philosophy which deal with the characterizations of truth as opposed to error and the reality as opposed to appearance respectively. According to Immanuel Kant, there is a sharp distinction between non-real and real things; in appearance an object is nothing other than phenomena that we know only by our theoretical reason, and we can apply our conception and perception to the phenomena only, not to noumena (thing-in-itself or reality. In a case of perception of an object, the perceiver can receive only the manifold sense-data coming from this object as containing in his / her experience that is also called an empirical cognition of phenomenal object. Apparently, the perceiver believes that the appearance is a real object; but in this appearance the experience of an object is not the knowledge of reality. Like some objects of appearances, these are not pure but merely subjective representations; there are many non-real or fake things which come from different sources such as imagination, illusion, hallucination, etc. But, the reality, on the other hand, is noumena (as Kant puts it) which is the actual form of object or 'the thing-in-itself'. Our senses generally represent something to us as it appears; it is merely a representation of an object, not the reality as it is.[2] However, the fundamental problem is: what is the relevance of virtual reality in opposition of actual reality? For answer, we can explain it from the ontological point of view.[3] Kantian philosophy holds that thing-in-itself (noumena) is hidden behind phenomena. When one as a knower claims that the thing T is actually real; it means T exists in the physical world, and it is real because it is not a mere appearance, but an extra appearance. Not only that,

a knower can acquire the knowledge about it in its appearance, though sometimes it is not apprehended as it is in its own nature (thing-in-itself), because either our knowledge is wrong in its process or very limited in its nature or both. However, we have to admit the real thing that is hidden behind the appearance. If there is no real thing behind the appearance, then our doubt would be void and the question would be raised: why do we see a straight-stick as curve or broken in a glass of water? It is not the case that this situation behind the reality is generally made only for one who has some perceptual difficulties, but the above phenomenal appearance (a straight-stick as curve or broken in a glass of water) is generally happened for all. So, we cannot deny this in our perception, and we, after seeing it and realizing the doubt through our scientific knowledge, can assert that the thing in appearance is regarded to be a likely real thing, but it is not actually real thing. The real fact is that we always try to find out the actual reality behind the appearance that we have perceived.

According to Bertrand Russell, in the perception of a thing as an appearance, there are some contents, though some of them are illusory, but we even assume these as certain things and ultimately it creates confusion and contradiction. However, we really believe these appearances as certain things that underlie our concepts.[4] It is obviously true that the reality is hidden behind the appearance, but we cannot reject the thing that is appeared in our observation. When we use the language to express our perceptual knowledge about the appearance, our statements contain counterfactual ideas which contradict the actual sate of reality. It is also true in the case of virtual reality where our thoughts, cognitions, imaginations, desires, etc. are transformed into the computer-generated models of reality. These are also counterfactual in the sense that the different characters of virtual reality are nothing other than the reflections of actual reality. In some cases, they are obviously false, because they are totally illusory, but in other cases, they may be adequate to be virtually possible.[5]

Degrees of Reality:

In fact, we must have to admit the degrees of reality because we often understand reality from the different perspectives. We generally use the word 'real' to determinate the actual thing that is differentiated from non-real things. For example, "X is real" it means "X is differentiated from non-X". Here, non-X is totally unreal. In order to express the different types of reality we also use some words, such as conceptual reality, perceptual reality, actual reality, conventional reality, virtual reality, absolute reality, etc. According to Kant, the real thing, as perceived in appearance, is an object of our sensation, and it is a degree.[6] Like Kant, the Buddhist philosopher also holds that we sometimes become percipients in the major cases of perception where we cannot make

a distinction between appearance and reality, but we commonly able to observe the phenomena as the real thing, and it is happened due to our ignorance. When one perceives a thing as it appears in front of him, it sometimes seems not to be real, because there are difficulties in perception or activities of mental construction (kalpana).[7] From the Idealistic (Advaita Vedanta) point of view, our external world is nothing other than a world of phenomena or a world of appearance or a world of illusion. In the pure consciousness, we realize that the world of appearance is not the world of reality. But this system does not deny the status of appearance or illusion as it is used in our daily life, because there are degrees of reality among the appearances. The system holds that the absolute reality is greater than the phenomena, but we cannot deny the phenomenal world where we live and try to distinguish between appearance and the reality from the pragmatic point of view. According to Bradley, appearances are incomplete realities, in the case where reality is unknown, the appearance as known to us seems to be more real than the real thing that is unknown and unknowable.[8] Therefore, we need to know what the actual status of appearance in the front of reality is, and to take it very carefully for the purpose of pragmatic utilization.

Reality is not enough:

It is true that philosophical enquiry is always trying to find out the real nature of thing and establish the right knowledge about the reality. Immanuel Kant introduces the critical philosophy and maintains phenomenalistic idealism which holds that the real nature (thing-in-itself) of reality is unknown and unknowable, because (i) it exists outside and independent of our mind, (ii) our knowledge is limited in time and space. We can know only phenomena or the object of appearance, but unable to know the reality. In the case where we want to acquire the knowledge of thing that is perceived, the appearance of an object or thing is also an important matter in this perception; because we want to know the real status of object as differentiated from its appearance. In the appearance, the object that we apparently see as real may be considered as an impression or a form of perception that is supplied by sensibility.[9] When we see a thing as an object of perception we, through our sense-organs, collect many sense-data as appeared in time and space and these give us subjective sensations of this thing. The manifold of sensations can be categorized and finally reformed as a unity by the pure reason. Indeed, the world of our perceptual knowledge is not free from appearance, and that is why we need to admit non-real things (imaginary, fake, illusory, etc) behind the reality. Though, modern science believes that the knowledge of reality is objective, but many philosophers believe that it may be subjective. The supporters of objective realism argue that the knowledge of truth depends on its object which is being known as it is, but the opponents, on the other hand, argue that it depends on its subject - the knower who knows the object from different points of view. It can be true to our unlimited quarries that our limited

knowledge of reality is not enough to know the reality as it is in its nature. When we are unable to know the reality, we can imagine it as we make it in a concept-formation. The cases, where the actual reality is not present at all, the virtual reality provides us some fictions that can be considered as like reality or ideally real thing.

Thus, we cannot reject the appearances which are found and known prior to the knowledge of reality. According to Bradley, appearances are indeed incomplete realities, all appearances are included in the reality, and even the reality includes all diversities of phenomena.[10] However, we sometimes believe our illusory world as partial aspects of reality. It is obviously true that our insufficient knowledge of real world cannot fulfil our unlimited desires. For this reason, sometimes we are not able to get the reality as noumena, but we are able to get the reality as phenomena which fulfil our conceptual demands. From the phenomenological point of view, every human being has the intentionality of consciousness by which he, as a subject of consciousness, can select the object as non-real entity that exists in the world of phenomena. It is non-real in the sense that it is not in its real nature at the time of appearance. To fulfil several desires or needs, modern man can change the present situation by the help of modern technology and able to create a virtual world where the object is apprehended as real or likely real. Therefore, we cannot deny the world of virtual reality as we get it in a form of appearance. Though, this artificial world is neither actual nor natural, but mere machine-made situation where imaginative human mind yet can participate in several unforeseen events which are not possible in the real world.[11]

The Virtual Reality:

Though there is no well-defined popular definition of virtual reality which will be objectively or universally accepted by all, yet we can explain the virtual reality by taking the meanings of two words 'virtual' and 'reality' from the different points of view.[12] Heim Michael has clearly mentioned the word "virtual" as a philosophical term that indicates the meaning "not actually, but just as if". The value of virtual existence as a debate has been discussed in the history of philosophy especially in the era of Duns Scotus at the end of the medieval period and the beginning of the age of nominalism.[13] The etymological meaning of the term "virtual" is nearly true or for some purposes it can be regarded as true, but not true in a formal sense. The term 'virtual' is derived from the Latin word 'virtualiter' or virtualis or virtus which indicates an experience of imagination behind the empirical knowledge, or it means something imaginary that is conceptually formed in mind behind the physical or perceptual world.[14] The term 'virtual' is technically opposed to the real. When we use the word "virtual", it generally denotes 'something stimulated' or fictional or illusive, and very commonly indicates something mental or conceptual as it is ideally real for specific

purposes, but not actual as it is physically real. Indeed, it is a concept based image or an object which has no real shape in our physical world, but has an artificial environment where it is mechanically constituted as the image of an object formed by a mirror. In order to define the characteristics of virtual reality we can say that virtual reality creates an artificial or illusory world that can be understood as likely real by the use of advanced technology. Both users and viewers can observe the object of virtual reality in an artificial situation if they were actually there. For instances, virtual friends, virtual images, virtual memory, virtual classrooms, virtual libraries, virtual environment, virtual objects, virtual reality, etc. All these are included in the domain of virtual world. We very often use the term "cyberspace" to indicate a sort of computer phenomenon which is neither actual nor physical space, but it is only a virtual space where virtual objects exist in contrast to the real space.[15] It sometimes refers to something artificial such as artificial intelligence that can be understood "as if", but not "as it". The concept 'virtual reality" traditionally means something like reality, but not actual reality. The term 'reality' refers to a set of things as they actually exist in the external world and denotes the thing as it is in itself and as opposed to that which is only imaginary. Now, virtual reality is a technology based or computer generated environment or artificial situation which contains virtual objects, such as virtual bodies (avatara), virtual class room, virtual building, virtual battle field, virtual weapons, etc.[16]

In fact, there is no satisfactory definition of virtual reality.[17] The common view is that virtual reality is a set of fictional objects produced by computer technology with a specific machine-generated situation where human imaginations are represented as a form of image or object and seemed to be apparently real or very like real. Thus, virtual reality is an artificial programme of computer as made by the computer scientists with the help of software technology and finally able to represent illusory object in a specific environment or situation to the users and even users accept it to fulfil their virtual needs as they imagine and desire it to be real. Not only that, like scientists users, by the digital technology, can create a world of virtual reality along with an artificial environment, where they can participate in several programmes or activities and successfully communicate their ideas to others. When one says "X is virtually real" it means something that is apparently real (like real), but not actually real. Here, X is a concept-loaded programme or a computer based version[18] which acts to motivate us towards artificial situation and can do something to fulfil our conceptual needs. In fact, X is a post-imaginary situation considered as a technological representation of fictional object associated with a form of image by which users can produce something like extra reality. Consider a situation where an engineer has made a full 3D virtual image of luxury car in which all facilities are available as an extraordinary car of advanced technology. It is a future model or a dream. After watching an advertisement of

a company through the 3D picture, the would-be owner can observe all parts of this car before actual manufacturing. Imagine it; the owner in an artificial environment can also virtually operate this car with smooth driving. Though the fact is that all are merely machine-made situations that provide the virtual car, yet the owner can fulfil his desire before purchasing the car.[19]

Concept-formation for Virtual Reality:

The world of virtual reality is not possible without human mental act and state of affairs, i.e. human senses, sensation, willing, feeling, recognition, conception, cognition, imagination, etc. These acts are totally subjective in existing situation which demands extremely fast mental reflexes. However, virtual reality is now considered as an experience of computer scientists based on advanced technology, it can be conceptualized and perceived by our sense, but neither clearly nor systematically described.[20] In a computer programme, the whole process of virtual reality has two aspects – conceptual and perceptual. Indeed, the world of virtual reality deals with human conceptions and perceptions. Advanced technology opens the both aspects of virtual reality. Conceptual aspect is based on human cognition and other aspect based on sensory or perceptual experiences. When virtual reality is defined as a set of images and sounds produced by a computer, the two sense-organs, i.e. eye and ear of user, are related to the set, and the mind as the sixth organ is also related to the set in the process of concept–formation. When a user creates an artificial situation on computer, he / she can use his/her cognition to formulate an idea or a concept that generally comes from imagination. In a case of perception of an object in virtual world, the object that user can see on computer-screen is actually originated from imagination, and after this the user makes its concept-form in his mind, and then creates its image by the help of digital technology. For instance, before creating an Avatara in a computer programme, a user desires to see it; and that is why he makes an image in his mind by the help of acquiring conception. The whole process is called concept-formation. In order to represent this concept with audio-visual impacts, he creates the alien which seems to be real in the sense that it fulfils the user's desire and motivates him towards the object. According to Kant, when an undetermined object in a conceptualised appearance becomes a phenomenon, it is something as it appears, but not yet noumenon (the real thing).[21] The virtual reality, therefore, is nothing other than an apparently real form of imagination or a technological representation of concept.

Perception of Virtual Reality:

Here, an important question is, is perception of virtual reality merely illusory? Before answering this question we have to understand the difference between reality and perception. Actual reality is the thing as it is in its own nature, but perception is what we are seeing as an object of

perception. The thing that we are seeing may not be real, but we can see the thing as it is appearing in front of our sense organs. Indeed, perception is a strong way of direct awareness, but sometimes we observe that it is not enough for right awareness. The virtual world is an illusory world or a world of artificial situation that has cyberspace where things appear as real but they are not actually real. In the case of observation, the virtual reality, indeed, is an illusory perception (or one way of looking) of thing that is perceived to be real but not actually real, even though the preceptor apparently feels it as a new reality (like reality). Hence, it is nothing other than a pseudo-reality which depends on the programme of modern technology by which one, being a user or a perceiver, can construct a new kind of phenomena or artificial fact in an artificial environment and communicate it to other. He can also observe the changes of facts that he has already designed in his imagination and desired in his mind. Epistemology explains the erroneous knowledge due to false perception. Many philosophers argue that illusion is a false perception caused by different things, such as the lack of sufficient light, difficulties of sense organs, lack of proper concentration, false belief, mental disorder, lack of attention, unlimited desire, lack of right knowledge, etc. Following K.C. Bhattacharya, we can say that an object, in fact, is known to one's conscious mind as perceived if it is to be conscious of a percept, and it is known as unperceived when it is a concept of an image. For major cases, perception of an object and its interpretation are obviously subjective, and that is why the different interpretations are possible.[22] This is true for both external and internal (inner or mental) perceptions. A user can perceive an object as an object of his conception - it is a perception of mind via cognition. But, when a user is able to perceive an object as an external thing, it is called sensory perception via sensation.

From this, we can say that the perception of virtual object is undoubtedly a perception. But the question is, can we say this perception of an object in a virtual environment is right? Indeed, the perception of virtual reality is not a perception of actual reality. But when a user creates a virtual world by taking digital technology, obviously he can receive virtual experience with a feeling of fantasy that is apparently perceived as real. It makes an effective interaction where the user and his / her computer are connected and make contact with each other. In the case of perception, the preceptor, the computer screen, the time when the process of perception is running and the space where perception is occurring – these are, however, actually real.

Generally, we say that virtual reality is an experience of illusion which nobody is able to see as real, because it does not exist in the real world. For a viewer, whatever is perceived as real thing in the world of virtual reality is nothing other than a technological representation of imagination. Perception of virtual reality is related to representational concept which is not merely a repetition of concept, but representation of independent object. For example, in the case of perception "P"

of a car in a virtual environment, P contains both concept C and image of a car I. This perception P is related to both C and I of an object car that has particular properties, i.e., wheels, doors, windows, etc. When it is only a matter of concept, its properties would be only literally meaningful, but when it is a representation of concept through computer screen, it would be visible to both the user and the viewer as an independent object of virtual world, even if it does not exist as real in the physical world.[23] The perception of virtual objects is possible if a user can acquire the knowledge of techniques or tricks that create an artificial environment. When the user enters in a domain of artificial environment and observes imaginary scene via computer screen, he becomes a viewer of the world of virtual reality that is not, and never can be, real in the physical world.[24] For example, in a perception of virtual reality, one can land on the moon and move there with smooth walking and just feel a resident of the heaven of moon, but in actual reality he is sitting now on a chair in a computer room. The situation can be changed in different ways if the viewer and computer are moved. It can also be changed from the different perspectives. Ultimately, perception of virtual reality is a perceptual experience that can be philosophically explained. Most probably, it is an experience of the sublime that indicates our realization of finite perception in front of infinite possibilities or alternatives.[25] On the basis of our knowledge; we always want to know the unknown and uncommon thing that exists in the virtual world.

In a perception, the world of virtual reality is not a small thing, rather it has a large space where the viewer can access unlimited matters in details and very easily react to them. Consider this case from the metaphysical point of view: the perceiver in the case of perception of virtual object is no doubt an actual person of the real world and suppose his / her sense organs are totally free from all disputes or difficulties, and as a result, he / she can see everything around him / her as real. After seeing, the feelings of the person are also real and sometimes the viewer cannot make any difference between what he is seeing and the thing behind what is seen. Moreover, to the viewer, the virtual object is often considered as real, because it fulfils the desires that the viewer makes before seeing the artificial situations. Here, that the perceiver is real, the process of observation or perception is real (correct), the experiences of perceiver are also real; so why do we not consider the object of perception as real?

Understanding the Virtual Reality:

Now, some relevant questions are in order: How can one understand the virtual reality as it is? What is the role of computer for this understanding? Can a computer have any intuition for it? In answer, we may say, understanding the virtual reality by human being, in fact, is obviously a multi-sensory experience which depends on sensory perception as conducted by the human sensory system and psychologically organized in mind by the collective efforts of sense organs.

A computer with a new version of programming can create two realms – the realm of artificial intelligence and the realm of artificial intuition. To understand the nature of the world of virtual reality, the users can enter the world of artificial intuition by the help of artificial intelligence. A computer-based intuitive programme offers an artificial insight which helps us to understand the virtual reality, and the users, by this programme, feel something like real as the objects of virtual reality appears in an artificial environment. This programme needs an artificial environment, imaginative mind, immersion, motivation, faith in unknown world as well as in illusory perception, ability for feelings of unreal fictions, immersive attitude, etc. In understanding virtual reality, the participant tries to realize the situation that is produced by sensory information and come from virtual environment, and wants to receive it by the sense of reality produced from sensation and perception. One's participation in the virtual world and his/her realistic belief generally depends on sensation of immersion. There are two components of immersion – sensory and functional. A participant or a viewer tries to understand the degree of immersion by his/her effective sensation. If the effective sensation (or perception) of participant is increasing, then the object (Avatara) of virtual environment can be moved with immersive virtual system. The functional characteristic of immersion determines the operational component of virtual environment.[26]

Conclusion:

The world of virtual reality, however, has been designed by the imaginative mind of human being, and it has presently arrived and dynamically come to stay in the real world. In fact, the concept-formation for virtual reality depends on human cognition and perception depends on sense-organs. The two activities- conception and perception - can go together hand in hand. Without concept-formation the world of virtual reality can neither be designed nor can be an object of perception. Moreover, the concept-formation is the key-feature for the object of virtual reality, our mind can imagine unlimited objects for virtual world through concept-formation. But without perception concept cannot be visualised. In the world of virtual reality, there are some disadvantages of using the virtual reality in the real life, such as excessive addiction to the illusive world of virtual reality, faith in artificial environment, quite expensive to the users, lack of flexibility, functional complexity, lack of utility, etc. Some critics have already considered the virtual reality as 'a mere brainwashing technology' that may enter into our though-process and work-culture, and change our socio-economical demands. In spite of all these, the world of virtual reality, for its users and viewers, opens the door to participate in the different programmes of the new world. The computer scientists can easily assume the real possibility of virtual objects from the present events as well as practical applications, though this assumption may not be logically justified. Yet it can be

established to us as real in two ways – conceptual or theoretical (to will / to imagine) and perceptual or practical application (to accept). Like computer scientists, we also believe it along with its limitless services to the different fields, such as the field of telecommunication, the field of market economy, the field of medical science, especially surgery, the fields of engineering and architecture, the field of teleconferencing and many more, because we infer it from the present situation, i.e., the present day applications of virtual objects. Finally, it is possible to say that the two worlds – the world of virtual reality and the world of actual reality may exist together in front of us as the two results of conception and perception.

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