

Virtual Satisfaction of Human With the Need in Attribute of Things

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Abstract

In the real world, the entity and attributes of an object are unified. It is generally believed that inseparability of entity and attributes is fully embodied in the energy character of the object. Although entity and attributes are inseparable, it is likely to realize the relevant separation of entity and attributes by means of virtual reality technology (VRT). As a matter of fact, this kind of separation means relative separation of entity and attributes with virtual reality technology as the medium. This is of great significance as it enables people to get satisfied with their desire to perceive attributes of an object, and it is a way to satisfy people's infinite desire by technology. With the swift progress of this technology, all kinds of limitations in the real environment successfully break through and the degree of human freedom is greatly improved.

Key words: Virtual reality; Entity; Attribute; Information

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INTRODUCTION

In the real physical world, it is considered that the object is the unification of the entity and attributes, which cannot be separated. This article discusses Virtual reality technology (VRT) and the relationship between the entity and attributes, and analyze what people acquire from things are, in fact, attributes. VRT verifies the entities and attributes can be relatively separated. VRT simulates attributes, and makes people elevate the constraint of real physical world, and in this way, people's desire will be satisfied to the greatest extent.

1. THE ISSUE OF ENTITY AND ATTRIBUTES

Object refers to an objective thing that engenders a relationship with practice of human being. In the past, when people talked about the entity, they always referred to its general sense, namely, an objective thing that was independent of man's will. The entity we mention here refers to the pattern of an object that engenders a relationship with our practice. Discussion on the issue of relationship between entities and attributes has been extending for more than two thousand years from Aristotle to Locke then to Hume. It is generally thought that Aristotle basically adheres to the standpoint of materialism. He said, "We can, in many senses, say that one thing is one, but all these things are correlated with a central point. This point is a definite thing and it is, unambiguously, regarded as an entity." (Aristotle, 2000, p.33) Therefore, an entity is a thing that exists independently without depending on other things, whereas attributes have to attach on an entity to exist. Without an entity, there are no attributes. Any attribute is an attribute of an entity. On the contrary, any entity is an entity with an attribute. There is a relationship of primary and secondary qualities between them. It can be found that Aristotle was

in a firm belief of entity “real existence”. However, he had no pertinent discussion on the theoretical evidence for the existence of entity. Furthermore, Aristotle failed to point out that entity and attributes can also be “separated” in particular circumstance.

On the issue of entity and attribute, Locke refined discussion on this issue of ancient Greek philosophy. He defined the entity (property of extension) of a thing as “primary qualities” and the attribute of a thing as “secondary qualities”. The entity, in his view, was a collection of some simple concepts plus “a presupposed and unknown supporting thing that supports the property which has been discovered and which exists.” (Teaching and Research Office of History, para.6, 1982, p.384) As for whether there is any entity that exists, Locke was inclined to an affirmative attitude although he had some doubts. The reason is that if there is no existence of substance entity or spiritual entity, there will not exist anything. Neither will the external sources and internal sources of our perceptions be proved. Of course, Locke also acknowledged God as an entity. Generally speaking, the reason for Locke to acknowledge the entity is grudging, but his reflection on the issue of attribute of an entity is of great reference significance.

According to Locke, primary qualities of an object refer to the size, appearance, number, location, motion and motionlessness, etc.. Our concept of primary qualities is similar with the qualities of the primary nature of an entity. Nevertheless, secondary qualities refer to the concept generated in the mind of human being by the capacity of primary qualities, such as, the color and lustre of an object as well as fragrance and sweetness of taste we perceive. Our concept of secondary qualities is not similar to the nature of an entity, neither there is any objective object that corresponds to the concept of secondary qualities. It is noted that Locke has enhanced his so-called primary qualities of entity to a height of substance entity and endowed this kind of quality with objectiveness. Nevertheless, secondary qualities are directly and closely connected with human, or subjectivity. Locke explained the cause for the generation of secondary qualities, he said “It is obvious that movement from an object passes through our nerve and certain parts of our body or animals’ soul is transmitted to the brain or the sensory center, and our soul engenders particular concept about that object.” (Teaching and Research Office of History para.6, 1982, pp.454-455) It is believed from the above discussion that, in the viewpoint of Locke, primary qualities and secondary qualities are separable.

Hume raised sharp doubts about the existence of entity. The reason is that we only had a concept about nature, yet we had no perception of so-called entity to which the nature was attached. In this way, by no means could we affirm that entity existed or not. Still, Hume affirmed consciousness – existence of impression and notion. According to Hume, impression can further be classified

into sense impression and introspection impression. Sense impression is primary and its causes are unknowable. According to Hume, notion is a kind of certain thinking on impression, and “the most vivid and lively thinking is inferior to the most thick-skulled perception.” It can be found that Hume held an affirmative attitude towards impression of perception. What he did not affirm is just the entity behind the perception. The entity here mentioned in this paper is the pattern of an object that engenders a relationship with our practice.

2. VERIFICATION ON UNIFICATION OF ENTITY AND ATTRIBUTES WITH VRT

Successful application and continuous development of VRT has created, in the real world, new basic time-space patterns of an object. Simply speaking, VRT (Virtual Reality Technology) which applies both software and hardware systems of computer and all kinds of supporting equipment (such as, sensor, data glove, helmet mounted display and so on) creates an environment that let people immerse in, which gives the experienter a kind of feeling that they are in the real environment. For instance, an environment (eg. carrying a baby in the arms) is designed in advance, and necessary equipment as helmet mounted display is equipped for an experienter in an appropriate way. Then, after the virtual reality system is started, the experienter feels that he is really embracing a baby. In terms of feeling, there is no actual difference from the reality. Even though there is difference, it will disappear step by step with technology progress. The experienter has no doubt at all about the smoothness of the baby’s skin, the brightness of his eyes and his special body note. However, he is, as a matter of fact, in a virtual atmosphere created by a set of software and hardware equipment.

The key of VRT is to simulate or re-present attributes of an entity with its superb and elaborate technology. These attributes cover attribute of the entity proposed by Aristotle as well as the qualities of primary and secondary qualities proposed by Locke. It belongs to technology that how to build a virtual reality environment, and we will not discuss this issue. Our focus is that why the attributes of an object can be presented to human being when there is no entity (for example, there is no baby at all). Are entity and attributes separable? Furthermore, if entity and attributes are separable, does the entity itself exists? Whether is there no foundation for the existence of entity?

First of all, it is the level of technology. In order to design a virtual environment, it is necessary to conduct a detailed and comprehensive research on various parameters of this environment in the real situation. We still take a virtual baby as a case. The researchers have to test the height, weight and appearance, etc. (all belong to primary qualities proposed by Locke) of one (or more) real baby as well as his skin color and body temperature,

etc. (all belong to secondary qualities proposed by Locke). Then, the researchers need to screen and estimate the tendency of any change and all kinds of random situations (such as, the baby cries due to a certain reason), and create an enough huge data base, with the expectation that the virtual baby will be more life-like and natural. Then, under the virtual circumstance, what is presented to the man who “carries a baby” is nothing more than the attributes of a real baby that are designed in advance. They are just attributes conveyed to the receiver by means of a medium (VRT). That is to say, VRT is a set of information processing system. In order to process and transmit information, this system serves as an intermediate link between the entity and human being who perceive attribute of the entity. When the virtual reality system comes to work, as a matter of fact, the information (the kind of information simulating the attributes of an entity) is perceived by human that is carried by the various equipment and instruments of VRT which directly act on human being. Assuming that one’s eyes are blindfolded, if he is asked to touch a life-like and fake snake having exactly the same hand feeling with a true one, he is bound to believe that he has touched a true snake. In this case, this fake snake is also an entity and it actually bears the information of the attributes of a true snake, though the attributes of a fake snake that the person perceives. Hence, what VRT imitate are merely the attributes of an entity, and it is unlikely to make the entity itself virtualization.

Then, it is a view of the subject of perceptions. The person who experiences in virtual reality environment temporarily termed as a perceptual subject. Perception of the subject means the visual, hearing, smell, tactile and taste ect. We often mention. It can be found that this kind of perception is abundant. When the subject perceives in virtual reality environment, there is a critical element is indispensable for continuation of the perception activity, which is energy of the perceptive subject. (Likewise, energy is indispensable of the virtual reality system) For example, the perceptive subject can perceive the pleasure in eating delicacies. He perceives fragrance of the delicacies, mouth-feel and strength of chewing, sound of the teeth by rubbing with vegetables as well as the feeling when the food streaking the throat. However, as a matter of fact, he does not eat anything. That is to say, in the environment of the virtual reality, one can acquire a feeling, but he is unable to acquire energy. Even though the feeling of acquiring energy is engendered, it is of no help, as real energy has to be obtained in a real world. Without energy, perceptibility of the subject no longer sustains. In this sense, entity does exist, and, what’s more, entity (the perceptive subject is also an entity) and attributes (perceptibility is a kind of attributes of the perceptive subject) are inseparable.

3. RANDOMNESS, INFINITENESS AND COMPLEXITY OF ENTITY ATTRIBUTES

Emergence of VRT has had a significance impact on all the aspects in human production and living. By VRT, human has been able to virtualize a new world on the basis of the real world. Furthermore, imagination of human kind helps to virtualize things and environments that do not exist in the real world.

Attributes of a real entity itself already exhibit the features of randomness, complexity and infiniteness. Firstly, the objective world is infinite and colorful. It is true that attributes of various things exhibit the feature of stability in certain time and space and on particular conditions. However, as all things are constantly changing with the combined effects of internal causes and external environment, these changes, which although present certain tendency, but always exhibit the features of randomness and incapability of accurate prediction. Secondly, the subjective wishes of human being also present the features of randomness, complexity and infiniteness. Although the desire, sensibility and sense of human are stable in certain time and space and on particular conditions, the features of randomness, complexity and infiniteness of human seem more prominent, as human being not only interact with the objective world, but also interact with other people as well as themselves. Then, how the entity attributes in virtual reality environment present?

First of all, it is the infiniteness of entity attributes in VRT. Not only will all natural entities be “generated” in virtual reality environment, but entities of virtual things will be continually made, evolved and developed in the huge virtual reality network system. How about spiritual entities? In the real world, a spiritual entity relies on substance, so there is no purely spiritual entity that is visible and tangible. In the virtual world, a virtual spiritual entity also exists rely on the existence of a virtual material entity. A virtual entity is said to be infinite not only because the property of a real entity is infinite, but also it is based on human’s infinite creativity and imagination. In the virtual world, most of impossibilities in reality are likely to become possible and possibilities in the real world can mostly be “realized” in the virtual world. What’s more, human beings are constantly creating and imagining and turning their imagination into “reality” by VRT. A virtual entity also has its limitations; the design of VRT is based on people’s life experience, their creativity and imagination. All virtual entities are directly or indirectly branded with the mark of real behavior. At the same time, even though we are able to imagine something, we are unable to virtualize it. For example, we are not able to virtualize the feeling of touching the sun. In other words, only can an environment which conforms to

human's experience be realized in virtual reality system, such as peak experience, and experience in surpassing environmental restriction, etc..

Secondly, randomness and complexity of attributes in virtual reality environment. With the progress of technology, the interactivity of VRT is gradually intensified. In such an environment, to produce more vivid experiences, abundance attributes of vitalization entity should be inclined to infiniteness. In consideration of technical characteristics, VRT designers are unlikely to fabricate infinite virtual entities in the virtual reality environment, and instead they have to resort to the generation technology of virtualizing attributes. That is to say, in the virtual reality environment, quite a lot of virtualized entities are not placed there early as in a real environment. Instead, they are continuously generated with activities of the subjects. Then, generation of the entities has the features of complexity. In the process of generation, any random event may occur. As a consequence, the generation process may be interrupted or deviated. Furthermore, some impossibility in the real world may randomly arise, and even virtual monsters may be generated. The process itself of generation and randomness of a virtual entity are an important cause for complexity of virtualizing entity attributes. Strictly speaking, both complexity and randomness of virtualized entities originate from infiniteness of virtualized entities. This is because in a virtualized world, the infinite possibility of virtualized entities rises to great randomness of the virtualized entities, and, accordingly, the great complexity.

Thirdly, the virtual reality entity has the feature of energy. Generation of a virtualized entity calls for support of a variety of material equipments. Maintenance and movement of a virtualized entity are supported by flows of various data, or all types of information. Nevertheless, any information in VRT needs energy. Without energy, everything will be at absolute rest. Of course, in a virtual world, energy consumed we perceive is virtual, is not energy consumption in a real sense. For example, with VRT we can make special applications such as a destructive collision test to an automobile in a virtual environment. A real collision test consumes gasoline and electric power, maybe cause large destruction. However, such a test made in a virtual environment not only greatly reduce the energy consume but also the cost, and the effect is almost the same with a real test. It has to be pointed out, the feature of non-energy of a virtualized entity stems from virtualization, which is not contradictory to the fact that the process of virtualizing an entity needs energy.

It is exactly the energy in a real sense that supports existence of the virtualized entity that has the feature of non-energy. The same is true of the people who are engaged in the practice of virtualization. In a virtual world, the energy that is consumed virtually is nothing more than the product of human's ideological activity. It

is the consumption of energy of a real person that offers actual supports.

Attributes of an entity are virtualized and the abundance of virtualizing entity attributes is far greater than the abundance of a real entity. Besides, a virtualized entity has the same effect with a real entity on satisfying the subjective perception of human being. Therefore, the subjective need of human being can be fully satisfied in a virtual environment. This, to a large extent, enhances the degree of human's freedom. Furthermore, based on the above analysis, we underline more deeply such a conclusion that entity and attribute are inseparable. And it is the non-virtualization of energy that is the powerful foundation of this inseparability.

4. CLASSIFICATION OF ENTITY AND REALIZATION OF ITS ATTRIBUTES BY VRT

Objects can be classified into natural object, social object and spiritual object. Attributes of these three kinds of object patterns (entities) can all be realized by VRT.

First of all, VRT realizes attributes of a natural object. A natural object is one that exists in the natural world and that enters human cognitive field. There is no intervention of human factors in the process of generation of natural objects which enter human cognitive field of vision, such as, mountain, water, microorganism, animal and so on. Perceptibility of human being has to be taken into consideration in a study on attributes of a natural object as the so-called attribute has to be attribute perceived by man, such as, taste, temperature, height, volume, hardness, movement of internal molecular of an object and so on. VRT has been almost able to simulate all these attributes and bring a feeling as a real natural object. For instance, in the case of a virtual coconut that is carried in the hand, people perceive its volume, weight, temperature and the hardness of its exocuticle by means of all kinds of multimedia equipment and sensors. When this virtual coconut is drilled and its juice is drunk, its unique taste of sweetness can also be perceived. Virtualization of attributes of a natural object is a great challenge to the VRT, as there are too many factors in a real environment. Only combined effect of various factors can bring a feeling of presence on the scene. Therefore, before attributes of a natural object are virtualized, it is a primary condition to take much data sampling and make much imagination. Then, a complex and thorough processing is required to strive to restore the original appearance of the natural object. All this is aimed not to lose the feeling of reality.

Then, VRT realizes attributes of a social object. A social object is one that is not measured alone by a spiritual or physical concept. This is because a social object not only has its spiritual attributes, but also has its

physical attributes. That is to say, it has both a spiritual level and a physical level that supports the spiritual level. In a word, a social object is synthesis of the spiritual pattern of the sum of relationships between human beings and the physical patterns required to maintain these relationships. Human kind invited law and moral norms to reconcile all kinds of contradictions in daily production and living. They are one part of the social object. Nowadays, virtual reality technology is able to construct a virtual community by virtue of the strong network system. This enables people to feel as if they live in a real world although they live in a virtual community. All rules are rooted in delicate re-creation of the reality. Let's take construction of a virtual court as an example. In the virtual world, people are entitled to take their old way. Yet, they are not allowed to violate the law as they will finally get back to the reality. And any behavior in the virtual world will affect their behavior in the reality. Therefore, even in the virtual world, people are not allowed to violate the law. Once people in the virtual world violate the law, they have to be put on trial. The effect of caution and education on participants in the virtual environment is almost the same with that in the real world.

Finally, VRT realizes attributes of spiritual and cultural objects. A spiritual and cultural object is absolutely a creature of human kind, though it is often supported by certain physical patterns, it is mainly a spiritual pattern. People always have the emotion of love or hatred towards the realistic life in their living as well as their vision and fear of the future, which we all resort to culture. Thus, culture is a changing process of the world caused by man, and is both the physical pattern (secondary, as a support) and the spiritual pattern (primary, as the core) produced in changing of the animated reality with willpower of man. VRT especially has its advantages and potential in terms of virtualizing attributes of spiritual and cultural objects. VRT enables people to enter arts ocean and have a good swim therein. It also enables people to reach the leading edge of thinking and rack their brains therein. For instance, in a virtual world, you can enter Louvre in Paris to appreciate the famous paintings by Leonardo da Vinci. You can also exhibit lifelike virtual works of art in a three-dimensional space. Furthermore, people are likely to make the creation in a virtual environment. For example, nowadays, a virtual reality system of *The Magic Paint Brush* has been developed. People have the freedom to make creation at will in a virtual world. Again, for example, in the field of science, when the virtual system is started, the researchers can be directed to the cutting-edge of thinking and practice in the contemporary world and manifest existing achievements and imaginations with visual and concrete prospects, putting forward problems and disadvantages. People are able to think more effectively in a virtual environment, make experiments and conduct all kinds of analysis activities.

5. SIGNIFICANCE OF VIRTUAL REALITY OF ENTITY ATTRIBUTES

First of all, realization of entity attributes with VRT has infinitely enriched people's prospect of life. The new practice mode—virtual practice is a kind of creative improvement and supplement on the traditional practice mode. In the real life, it is often difficult for people to fulfill some wishes due to insufficiency of their own ability or as a result of constraints of both internal and external environment. However, with VRT, their wishes can always get satisfied. For example, moon landing is extremely yearning for a person, especially an innocent child. Nevertheless, moon landing not only requires quite rigorous safeguard in terms of technology, but also requires that all the qualities needed by a person should be attained. What's more, this process needs huge expense and also has potential dangers. However, virtual moon landing is totally different. The will of moon landing can be fulfilled easily. Also, it does neither call for arduous work of a technical team nor need substantial expense. What is needed for this experience is just relatively tiny financial resources and time to take part in a virtual environment and to experience. Yet, the joy obtained from the virtual travel and the fancy experience is almost equivalent to a real travel. As a matter of fact, what the virtual reality technology offers are a simple and feasible approach to normalize the peak experience. This, without doubt, will bring great freedom to people who are constrained anywhere in the real world, and will engender more choices and enjoyment.

Then, since man's cognition stems from their practice, VRT not only infinitely extends their practice field and living mode, but also offers infinite help to human kind in terms of cognition. Thought experiment is a kind of scientific research method loved a lot of scientists. When Einstein studied the issue of quantum photon, he envisaged a box with a perfect reflection wall which is brimmed with radiation. On the top of the box is a door, which is controlled by a clock in the box. The time interval between the opening and closing of the door can be as short as possible. Each time, only one quantum photon is released. Energy can be measured by change of weight. So long as the change is tested in the weight of the whole box before and after the quantum photon is released, it is likely to work out the corresponding value of reduction when a quantum photon is released from the box according to the transformation of mass-energy formula $E=mc^2$ in the theory of relativity. In this way, both the time interval and reduction value of energy can be, simultaneously, determined in an accurate way. This proves that the principle of indeterminacy does not hold water. Of course, afterwards, Bohr contracted Einstein's conclusion as he found that Einstein failed to notice the redshift effect of the general theory of relativity in the thought experiment. This is an interesting story about

thought experiment. As a matter of fact, application of thought experiment is mainly engendered by restraints of actual experimental conditions. Yet, by virtue of virtual reality technology, it is likely to design an experimental environment in a more scientific and rational way and virtualize some experimental conditions and parameters which are hard to be achieved in a normal condition to enable scientific experiment level to take a qualitative leap. In daily study, people apply the virtual reality technology with higher proficiency. In the case of foreign language learning, a virtual environment is created for language learners to enable them to get involved and communicate with virtual proficient foreign language speakers. This largely improves efficiency of language learning. More than that, virtual reality technology even tries to fulfill communication of human beings and themselves. It was reported by the US magazine "Science" on August 24, 2007, cooperation between scientists from UK and Switzerland had successfully realized "out-of-body experience" of man in a virtual reality. That is, the subject of perception perceived that his soul jumped out of his flesh and he saw "himself" with an identity of "bystander" and even touched "himself". Virtual reality and reality are continually integrated and mutually promoted as they become increasingly inseparable. Researching staff from the University of Illinois successfully design a virtual clock pendulum. They let this virtual pendulum "imitate" and "interact" with a real pendulum. They successfully realize combination of virtuality and reality. This is the first case that human kind integrates virtuality with reality which is inextricably involved. In brief, virtual reality technology has infinite potential in promoting human cognitive practice and it can be said to be an incomparable cognitive instrument.

Finally, virtual reality technology provides a great business opportunity. That is, it has promoted advent of the experience economy times. The most important feature of a virtual reality world is its sense of "vividness" and "interactivity". Virtual reality technology is able to create man-made environments of all forms which are life-like and bring a sense of being personally on the

scene. Interaction between man and a virtual environment deepens this sense of immediacy. It is a successful case that Milan virtual reality technology Corporation in China designs a virtual Suning mall for Suning Group. In virtual shopping, consumers stroll in a spacious and comfortable mall with dazzling commodities and have a good swim and choice at the top of their bent. Application of the virtual Suning mall not only promotes transaction of commodities, but also enables consumers to enjoy particular joy of virtual shopping. Obviously, owing to application of virtual reality technology in production, circulation and consumption decision making, producers, merchants and consumers will be all largely economize costs and improve efficiency. Especially for large-scale investment plans, application of virtual reality technology will greatly reduce risks of decision making, and, furthermore, realize the maximum rationalization from fabrication to consumption. This is exactly the huge advantage of experience economy.

CONCLUSION

Virtual reality technology is transforming the living mode and production mode of human society and even its emotion mode and thinking mode. We have made observations on some key application fields of this technology above in the paper. In effect, just as a huge mirror image in the real world, potential application of the virtual reality will involve in domains of the real world and will open up more domains thanks to human imagination and desire.

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