

identification to rely on difference ; construct to depend on an intermediary ; Virtual to through construction —the general process and mechanism of people's information cognition activities

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Abstract: Form a relationship to due to differences between things, information obtained present in the different relationships, it is only through the different relationship to identify the information; in understanding the process of arising, there is no direct touch between the subject and object, interaction between subject and object is be multi-level intermediaries, such as the information field, the subject physiological structure, the subject cognitive structure, the materialized tools of subject cognitive are the form of an intermediary of interaction between subject and object; knowledge of by multi-level intermediaries is knowledge of constructed and virtual in intermediary, each intermediary link of cognitive occurred is a relatively that the nature of intermediary link to occur of information selection, transformation and construction of the device, structure through the intermediary link, the object information is bound to happen some dogleg or rebuild of distortion, also in the information processing activities in people's thinking can also create a new information of subjective design, which inevitably presents the subject to object cognitive form and content, etc to some extent has been the scene of virtualized; The essence of virtual reality through direct simulation information environment, feel the experience, direct manipulation conversion of feel the experience, so as to realize to human cognitive the virtual; virtual reality is not only for man's cognitive possible ways to open up a very broad prospects, but also helps from fundamental to clarify as a general processes and mechanisms of human cognitive activities of information activity.

Keywords: Information ; Differences ; Identify ; Intermediary ; Construction ; Virtual

In philosophy epistemology, there are two masses are commonly seen to say: knowledge is a process of interaction between subject and object; objects in the world has entered human cognitive field in the cognitive process.

If we can seriously start to understanding the process of occurrence and expansion go on an examination, then we will find that the first version is the excessive come to the surface, while the second version is simply a fallacy. The crux of the problem is that can not have direct contact between subject and object, the interaction between subject and object are been multi-level intermediary, while the object of object itself is in any case can not be carried into the subject to it go on

knowledge, which could into the subject consciousness is only several times transformation in a number of intermediaries, selection, construction the information on the object of object, while the information of object they can only be through the corresponding of some sort of difference relation that appear to come out.

It is in the corresponding sense of the difference relation of the information displayed, we emphasize that we is " identification to rely on differences "; it is the information transformation in a multi-level intermediary, selection and sense of construction process , we emphasize that knowledge is " construct to depend on an intermediary ", and abnormal, dogleg, subjective design and innovation in

the thinking process what happened cognitive form or content in the process of intermediation construct, as well as simulation and so on of virtual reality to information intermediary and experience and perception are also fully displays the scene of person's knowledge activities " virtual to through the construction ".

1. The information is identified in difference relation

Generally speaking, things are always a complex between mutual relationship and interaction, however, any correlation between searches to its essence, is also mutual difference. Because only the between things of difference can speak the relationship. Owing to the existence of general difference of things, it construct a general relationship between things, thus constitute informational general differences and relational nature of show these things. Precisely things and informational this common difference relationship, constituted a human to information to grasp a general mechanism, which is the information only in a specific difference relationship, can be us that identification, recognized.

Let us give an example to analyze the following:

A line of white word written on red paper, in a certain distance of a person that show he won information of the white words that display through the visual. If we do not change the white words their own shape, color, and only will the red background changed to light yellow, then this distance on the same man, he might say he did not see any writing. This tells us, that the observer to white words that shown the information received or not, depend not only on the white words their own absolute information on state (is white words itself the shape, color that rule the state), but also on the white words where absolute informational state of the environment (that is its background). Only when the different degree between informational state of white words and background that reaches viewing the threshold, the white words can for us have observed. For the observer, the observation can not pay, he can assert that there is no

information about the words, observed after; it can be asserted to obtain information about the words. This observation process is limitation of informational different degree of two respects: one is informational different degree of that observed object and its surroundings, and the other is informational different degree between the different degrees and observer's feeling capacity (receptor threshold). If the amount of first different degree more or less threshold range of observer's receptor, then the observer the same has reason that he did not obtain information on the object. From sight point of view, we usually that perceived outside information, is only a certain amount of informational different degree. This leads to the information only in differences relationship can be identification, was recognized proposition of relativity.

This kind to informational relative understanding it has a very common significance. lighting setout of the same power, at day and night gives a different sense of brightness; due to pressure both inside and outside the consensus, people usually does not feel that gives the pressure exerted by the atmosphere; because people with the ground object of reference relative static state, enable people do not feel the Earth's rotation; due to limitations of tactile threshold, so that people do not feel slight stimulation that capillary fiber of the surface of clothes to skin; can not see the stars during the day and night to see unclear non-luminous objects, all suggest that explain the relative cognitive nature of people to information. Prescriptive of things only in different relations to get, this is no difference there would be no information, no difference between the information there is any the proposition of relative nature to information to identify nature cognitive informational display, information to grasp.

Information only in the differences relationships in order to be identified, the general principles is recognized, and fully declares by the environmental information of cognitive object, and structure of neurophysiology and cognitive psychology of cognitive subject to cognition produce that possess a key role.

2. There is no direct contact between the subject and object

On the theory of cognitive question, if our understand was just remain in the level simple interaction between subject and object, then it is still very empty and poor. Here too there is an issue of intermediary of interaction.

We must first admit that perceptual experience is the cognitive starting point. The perceptual experience is gained they can only come from the interaction between subject and object, but this interaction is not direct.

First of all, we should face up to a minimum the fact that in the process of our perception, the cognitive the object itself does not have access to our system of perception. Our human body, the human brain is only so a limited capacity, but we can object world of perception is extremely large and that this object world does not because it has been perceived us and vanishes. This has presented us with a question: in the end what it came to our perception system, which caused the occurrence of perceptive phenomenon?

Secondly, we should also be noted that in the perception process, our senses are not in direct contact with the cognitive object. We can see the sky as the moon and stars; we can hear the crow of a cock and bark outdoor, we can smell fragrance of a flower and dung foul the distance and these sun and moon and stars, cock dog flower and dung were all away from our body and exists. Our sense of touch, at the macro level, it seems that our body by direct contact with the object caused, but in the micro-quantum level, it is still a kind of process of indirect contact. This has presented us with a question: What in the end is to stimulate our senses, which gives us model of about the object?

Modern physics reveals: widespread exists among objects the general contact of field of various forms, link in this field is delivery to achieve through an intermediary substance (particles). This tells us that in perception, the subject and object although there is no direct contact, but there are all kinds of intermediary market must pass an indirect link. In fact, in perceptive process, to directly stimulate our senses is not the object itself, but the particles field of the reflection of object or radioactive

out. Since objects (particles) of different quality the particle field is different of radiation or reflection, so any the particle field of object radiation or reflection are specific, and which are distinguish each other particles field of radiation or reflection with other objects. It is general different nature of this field, so that any object be emerged in particle field that can characteristics of the objects displayed, so that this field has become that its compounds produced informational carrier, thus can also be clearer understanding of our in the previous section stressed that the principle of "information different corresponding to display". Proceed from here, we have reason to this field is called "informational field."

As a result, we can at least reach a conclusion: the interaction between subject and object is first by variety of informational fielding that intermediary. To see an intermediary is object radiation or the photon field was reflected; hearing intermediary is the mechanical vibration wave field of an object vibration out; the intermediary of smell, taste sense is various types of molecular field of the object radiation out; sense of touch is take various types of temperature field, mechanical force field, or chemical transmitter market as intermediary. These different fields are only the informational carrier of some aspects of object, and certainly not an object itself. Between subject and object there is no direct contact, and those irritant things of direct contact and can not be the object in this process, it can only play to the subject to pass informational carrier for the role of another matter. In other words, we will never only by aid of a third party to grasp our object.

Because the object does not directly stimulate our senses, therefore, the object would be unable to enter the subject at all. Then, informational carrier matter of direct contact sensory organ, whether or not it enters to human nervous system? Answer can only be negative, here refer to a basic feature of the informational transmission and conversion, namely the same information can be passed in a different carrier matter. Between irritant and senses have completed it is conversion of some energy, regardless the nature of external stimulus, it can only be converted to electrical impulse of neurons,

and the activities of chemical transmitters of interrelation between neurons. Through this transformation, irritants will itself loads the information of object transmission to various types of receptors, here a real into person's sensory system is object information, rather than what specific things.

In fact, the subject is continually outward radiation or reflective information field. In the medium side (field) of interaction subject and object, at the same time exists movement of reciprocal two kinds of information flow: one is movement of the subject information to the object the direction, one is movement of object information to the subject the direction. This reciprocal movement of two kinds of information flow so that objects and subjects that will arise some corresponding changes. The subject it is in the objects informational role that arise their own changes (physiology structure, changes of cognitive structure) is completed cognitive process to object grasp. In this cognitive process, the subject has to grasp not only for cognitive object, but also certain some characteristics to their own (such as, cognitive ability, cognitive situation, etc.) be aware of.

3. Cognition of is multi-level intermediate

The interaction between things is often not simply taking the form of one-level intermediary; it can take form of two, multi-level intermediate. Interaction between subject and object is a complex multi-level mediation process.

The discussion from the previous one, we can clearly see that information field of object is first of intermediary link of subject knowledge the object.

The second of intermediate link of subject knowledge object is the physiological structure of subject itself nervous system. Our nervous system, from the nerve cells, receptors, to various neural pathways, as well as the nerve center, brain, cerebral cortex, is high degree of specificity in physiology. The nervous system of the human body of high degree of specificity is our cognition nerve physiological structure which produces. Generally speaking, the differences of nerve psychological structure are most essential

foundation of cause differences in the general spirit activities. different of nerve physiological structure of due to the eyes, ears, nose, tongue, body and other parts of the receptors, resulting differentiation in a visual, hearing, smell, taste, touch all kinds of perceived; due to the physiological structure of the human nervous system and general animal nervous physiological with large differences in the structure, so the perception ability of people and animals is not the same, and, most animals do not have the kind of person senior spiritual activities ability. In fact, everyone's nervous system, from the receptors, neural pathways, until the cerebral cortex, with all other's the nervous system in the physiological structure that has a specific difference. As that exist such specific differences, so that each of us on the same object in the information of same aspect go on perception and process whose specific experience in practice are not identical. The difference between Color blindness and normal vision is an extreme example. In fact, specific feeling level of all the people to same color are all have different, but, because of this constancy of see different distinguish, as well as the people only through the agreement of the corresponding symbol can exchange that be seen information, Therefore, this see above differences between people is impossible to compare. On the contrary, due to difference of the nervous physiology structures that caused the differences in sensory threshold but compared easier. For example, we are easier to distinguish out some myopia, long sight persons, deaf persons, keen nose persons, and so on. Of course, we can not take the nerve physiological structures understand into static. The dynamic nature of nerve physiological structures one hand display is ongoing caused with cognitive process, the continuous development of with human body, and the nervous physiological structure there will be some specific change; the other hand, the nerve physiological structure has its own activity manner. People's perception, thinking process is not occurs in a static nerve physiological structure; the human cognition must by aid of nerve physiological structure itself an activity can start. For example, vision is depends on the eye and the rotation of

nerve cells in retina; hearing depends on the vibration of ear drum membrane. Any outside informational acceptance, transmission, processing and transformation all must to pass nerve cells their own electrical conduction and chemical transmission between nerve cells in course of activities to complete. So that we are here talking about the neural physiological structure itself should be understood as is a dynamics structural system of changing and development of has its own particular activity way.

The third intermediary link of subject cognition object is cognition structure of the subject has been building up in the first. This cognition structure includes both experienced cognitive schemata, frame, including the thinking mode of theory and methods, but also permeated with emotion, will, values, aesthetic and other factors, obviously, whether the structure of activity of subconscious is or a structure of activity of consciousness have been blend in this cognitive structure. From the embryology point of view, this subject has been building up cognitive structure first is information of the perceptual experience of the past, rational creational informational condensation, while it has gone through the corresponding perception, the cognitive process of thinking to achieve, but In the following the cognitive process, it is as a has been completed internal condition of subject has constituted the first. Is exactly what the information of object was received under this intermediary of fiduciary background of cognitive structure was the subject clear perception or processed. Individual differences in cognitive structure, as well as difference in the same individual cognitive structural development state at different stages of development, all will make this a specific pattern of perception, the specific process of processing is different. Of course, this follow-up cognitive process itself may also cause some changes in the original cognitive structure, so that make the next step of the cognitive process under a new cognitive structural intermediary to go on, which constitute the cognitive mode of subject uninterrupted changing and growth. Here, the intermediary itself is still evolving.

The fourth intermediate link of the subject cognition object is subject cognitive

materialization means (tools, instrument, facilities and so on). Thing is not a casual to us present to the essence of its own existence. To recognize specific things, to recognize its specific level, features of specific aspects, we must utilize understanding tools with it corresponding, methods and way. That is to say, specific things only in a particular subject can be presented in front of its objectifiability. Things become the object is that it requires the internal structure of cognitive ability of subject (the nervous physiology structure, informational cognitive structure) and external means (materialization tools, instrument, facilities) consistent with them. Do not have the profound cognitive structure, does not have special those who know tool, only by his the poor natural senses, a natural brain, in a very narrow range and a very superficial level to insight into things. To explore the cosmology and it above or microcosmic and it below things of the level, we must have a corresponding, very complicated, and even large tools (instrument, facilities) system, while the cognitive subject must also be recognized in their own internal structure of nervous physiology condensing at the same time cognitive structure of appropriate level and degree. Because the object demand the physiological structure of subject, cognitive structure, cognitive tools and it keep consistency, so the different physical structure of subject cognitive structure and cognitive tools in front, the object will show different the characteristics aspects. With a particular physiology structure, cognitive structure and the subject to master specific cognitive tools, only can in certain specific kind of state, the only from a certain depth, to grasp features in certain level of certain things, while some other things, as well as the characteristics of on a number other levels of these things to this particular subject will be closed.

If we put aside the cognitive purely primitive the origin and its in the first place don't say of individual cognitive structure, then we can conclude that: in human maturity, complete, from perceptual to rational knowledge activities, it is essentially is takes information of object, the physiological structure of the nervous system of subject, the informational cognitive structure of inner condensed of subject, the subject cognitive materialization

means as the intermediary links of this cognitive process engender and start. Cognitive process that this is nature of multi-level medium that fully demonstrated the indirect nature of interaction between subject and objects, as well as the complexity of the cognitive process generates.

The many intermediate links of the subject cognition objects is not static. In fact, with the object in itself changes in motion, with development of the individual physiology structure, with transformation of the individual cognitive structural model, with subject cognitive materialization means continuous evolution, the many intermediate links of subject cognition object in itself is also constantly change, evolution. People's individual reason of changes in cognitive ability, human reason of development in cognitive ability, can be illustrated by these changes of intermediate links, the evolutionary process.

4. Building up cognition in the intermediary

Since interaction between the subject and object is multi-level medium, since this many intermediate link itself changes and development is the reasons of cognition itself change and development, then the subject to object the cognitive scale, extent and state cannot but rely on in which a number of intermediate links in itself.

Cognition to it be generated the intermediary link which it has an issue of inevitable dependence, initially in people behavior on the micro-particles were observed in great attention. We know that the subject through specific materialization means can effectively according to their own rational guidance to make the movement of object and the whole people's knowledge process in a certain scale, extent and direction to launch. With the increasing development of materialization means, people are constantly expanding their cognitive the field; in the meantime, interactions between the subject and object will become increasingly complicate. So that in quantum mechanics, people have to cry out in alarm: arises a interaction of can not be controlled in principle between the atomic objects and measuring

instruments, this interaction constitutes an integral part of the phenomenon, so that we can not clearly distinction interaction between the behavior of atomic objects and measuring instruments.

In fact, the interaction can not be controlled how could is just exist in the instrument observation, in the human cognitive process at all levels all there is an interaction process of can not be controlled of complex and interwoven. This interaction process means that people can not be beyond the cognitive many medium links to the direct understanding object, which many medium links in essence constitute a reference background of the knowledge is generated. Object information in the context of this reference is selected, change, reform and construction. That way, people usually that grasp the object information is always inevitable, that suffer certain dogleg, metamorphosis in varying degrees, in which inevitably infiltrated certain nature of provision form these medium link themselves. In this sense, we would rather that cognition is a constantly building up its own process in the mediation, that is to say, we that know the information and object itself although there is some object relationship, but to reach our subject, and by our understanding to grasp the object information itself can only be through multi-level construct of multi-level medium arising out. Although informational construction by aid of a selection of information, but it has can not be reduced to the feature of such a choice, because the choice must take some information as premise, there is no certain information, choice such information will be not have meaning, but construction is more a transformation and creation, it in analysis and synthesis of the interaction of a lot of informational aspect (object information, the information in the various medium links, information on the object environment, internal environmental information etc of except the subject nervous system) produce a new informational state, this new informational state is that it the many informational aspects which analysis and comprehensive that is not simple with. In addition, select with clear features of analysis, it is an analogy in people's knowledge

activities way computer activity pattern of existing not very development, but man's understanding activity itself is not simple to follow the activities law of computer of current level, the former has a clear comprehensiveness feature.

Cognition in level of thinking is so obviously have some tendency go beyond the specific perceptual object; it that creates much new information of images and symbols, it was impossible to find in the real nature with it corresponding to the specific object. The information created by thinking although based on knowledge of specific objects, but also goes beyond these specific objects. Some of thinking created information can through practice be translated into objective reality target objects, such as the people designing the products, buildings, etc. However, the some thinking created information, but never not only in the informational mode existed, and it is impossible to translate into reality target objects, such as human beings by thinking that created world of heaven, hell, demons and ghosts. We have more full reason take mind as a creative activity of informational subject. Take cognition as an informational construction activity, which in the cognition activity join element of information provision of many of the medium link, also better reflect cognitive comprehensiveness, initiative, creativity, complexity, and other basic feature.

The information field is the first medium link of subject cognition object, so far as for the production process of information field of the object, it itself is at the object within or in interaction between objects and the environment to build out. The object through common interaction between inside and outside that constantly outward radiation or reflect a specific particles field, which put its own certain patterns of existent way and status from this particular particles field shows out. The information field of object by field structure internal differences, as well as the difference between the field structure and field structure of the environment to show that objects their own internal differences, as well as patterns of the difference between the object and environmental objects. Although the difference between inside and outside of the field and the object itself difference

between inside and outside to maintain a certain invariance of the corresponding pattern, but the specific form of the two differences is not entirely the same. This difference in the specific form is due to object with the help of an object and itself nature different to show itself a result of. For example, an object reflected photon field is not the same of the nature of the object itself element, the object vibration caused by the mechanical wave in the medium to transmit is not the same the nature of the object itself element, but in a different medium (or air, or liquid, or solid) spread form of the vibration wave is still somewhat different. So, informational model in the object information field is to show that existent way and status of the object, but the form of this model shows but they can not get rid rule of carrier material in nature. The form of informational model shown not is choice out from the object, but only constructed out in the transmission of medium field. Here, we have reason take object informational specific showing the state as a comprehensive of some characteristics informational side of the object and carrier material certain features informational side, if can a more detailed investigation, in this process of informational integrated, the is bound to there are still exists interfere with penetration of the information of information field of other aspects in the environment. It is just that any material information in it's engendering out of the same time, already integrated with other material information side Under different light background, the same object matter that presented to the same observer's the sight of possible visual color difference it couldn't is better example.

The physiological structure of nervous system is the second medium link of the subject cognition objects. Through this intermediary, subject to that received the external information go on construction of some adapt to its own nerve physiological structure characteristics, this construction no matter what how in information reveal the model, or in the showed way of this model both prevalent existence. Because of specificity of receptors, nerve structure on the external information to receive the first pass some of specialization options, but these have been chosen to receive the external

information once enters the nervous system will be transformed into form to adapt to this neural structures characteristic. These forms are not the choice from the outside information, but constructed out in the outside world stimulated by the characteristics of neural structures. Only take visual process as for example, we can clearly see the complex degree of this construction activity. We know that animals take colors based on perceive light information, since different animals have different color vision cells, so when the outside optical information through different animal's color vision cells, they will form different color patterns. Although we recognize the information itself the differential degree is conversion from outside informational the differential degree, but we take how color contrast way to characterize these differential degree, it is by nature of our neuron physiological structure to provide, If the different in nature of the neuron physiology structure, then it will inevitably produce a different color contrast means. We were able take seven-color bright-colored approach to construct on images of the external world, precisely because of our in receptors exists visual system of sense in red, green, and blue three kinds pigment, which can be different combinations of three colors is can produce seven kinds different colors. Not only the visual representation of the color contrast way in intermediary of neuron physiological structures is constructed out, and, depending on the model of see the graphics are also part in the activity pattern of the neural physiology structures is constructed out. There experiments prove that vision, people tend to just grasp some have different points in the graphic of object, through grasp to these point s information to establish some sort of scan path, constructed out overall pattern on the object graphics in the reference background of cognitive schematism of experience of then again in before that has been constructed. In the light of this process, that constructed out overall pattern of object graphics that often than the real into external information of visual more of what or less. Interestingly, different people see to same object, as in fact is very different, this is because they do not completely overlap to sense a set same points of difference, more

impossible through the full same a scan path to fabric these points together, more let alone everyone's nerve physiological structure as well as that has been constructed up the first cognitive schematism of experience is always exists differences of certain degree and certain aspects. In addition, we should also note that the visually see to object graph grasp is always the non-stop rotation of dependent on the retina nerve cells, any differences of such activities way of neural cells will give cognitive graphics to bring about some sort a fine distinction. In some lower animals such as where, due to is developed olfactory system than the visual system, these animals are not like our people this that very clearly can take form and color to grasp we are facing in this world, in those animals, where more clearly show is one on the outside world, "the information map of smell." This on the map of smells of the outside world, and is not result simply choose the same external information, it is still permeated with the factors of structured of neuron physiological construction. Because the structure of senses is different, we are take way of sound to perceive mechanical vibration wave, while in most of the insects, where it is required through touch form of hair or tentacle to perceive mechanical shock wave. Obviously, due to differences of the nervous physiology structure, the same stimulate of outside information will produce a completely different specific feeling and experience. Difference of this feeling and experience can only be nature of provision of using an intermediary constructed to interpret.

Although the phenomenon of perceive should be as a function of overall structure of brain, but the experiments prove clearly exists particular areas in the cerebral cortex different perceptual processes, certain types structural damage of particular areas certainly will lead to distortions, abnormal or lacking of particular perceptual process. Here is also clear proved the role of neural structure on the cognitive intermediary construction.

The third medium link of subject knowledge object is the subject first has been condensed with the inherent informational cognition structure. Above, we are talking about in the process of the graphics mode of object of perception; the subject has been building up

in the first cognitive graphic of experience involved in the construction of the object graph model. In fact, this cognitive graphic itself is already a component in informational cognition structure. We often have this experience, we sometimes will mistake believe that the distance an object is a person or an animal, but when we approached the object, have found that it is actually nothing more than a wood piles, or a stone. May we ask, when was mistaken, we actually see a person or an animal it? In fact, when we only see a rough model, but information on it is a person or a particular animal, but under match of cognitive graphic of we first have been constructed to build out. condensed and not just be part of the scope of understanding cognitive graphic, frames and so on in man's cognitive structure, in this cognitive structure of understanding above, but also condensed part of thinking mode and method of the scope of rational knowledge structure. People accepted and cognitive external information under the intermediary of this rational knowledge structure that is re-transformed, structured, thereby created a human rational and cultural world of beyond specific object world. Human rational knowledge this beyond nature to perceptual, understanding and specific object world; fully demonstrate the human cognitive informational synthesis construction, and informational subject creational the deeper essence. In man's cognitive structure is also permeated with a number of other psychological factors, such as emotion, will, value, aesthetic, the subconscious activities, etc., these factors are also knowledge produced an intermediary factors, also involved in the knowledge generated informational constructing process.

Must be mentioned is that due to development of rational knowledge capacity, so that the human perceptual, understanding activity has also been sublimated. In man's knowledge process, the various factors in the first cognitive structure has been constructed up (perceptual, understanding, rational, emotion, will, value, aesthetic, the subconscious and consciousness, etc.) is a mutual penetration, integration, and man's rational cognitive structure also for the cognitive structure of other lower-level to impose some control. As a person's this kind

of overall togetherness of cognitive structure, so that knowledge generated the process of intermediary structure presents a extremely interaction between complex and multiple aspect and multiple information, feature of penetration and integrated.

In addition, we would also like to point out that at the physiological structure of the nervous system and human cognitive structure to the information of that knowledge go to integrated construct same time, while there still exist the nervous system outside internal other system informational interference and infiltration, as human activities of the nervous system with interaction between internal other physiological systems started, and this interaction will also some of the internal information to enter into the activities of nervous system outside nervous system. Some systems outside of the human nervous system, the lesions occur in organs or changes of activities way, will be varying degrees of impact on scenario of human cognitive process is the best example.

The subject to object cognitive the dynamic aspects of most developed is the cognitive means of materialization. Cognitive means of materialization were extension and alienation of the nervous physiology structure of subject and cognitive structure. By cognition of tool, means increased an intermediary construct links of the subject on the object information go to knowledge. In this scenario, the object information must be selection through tool medium, transformation, reformation and reconstruction in order to reach human the senses. All the information outside macro world (cosmoscopy, and microcosm) of those in human physical senses can directly experience, only through the choice of tool medium, transformation, reformation and construction, will enable take us to understand. So far as this sense is concerned, we can only build up at the macrocosm level we are on the outside macrocosm theories of object world. In this scenario, embodied in quantum mechanics is very obvious. In the knowledge to field of cosmoscopy and microcosm, the reason for causing uncertainty of the observation itself, and the establishment of the facts at the same level of observation above the diversity of scientific hypotheses

and theories, informational intermediary construct activity that is more complicated of exactly lies in to these areas.

5. Virtual knowledge in the construction

For a cognitive phenomenon, when it occurs, it in essentially is a process of created out. On this point of view, cognition is not a choice of the information available, but a new informational state creation or construct. Of course, in such creation or construct does not exclude participation of informational selection process.

Taking into account multi-level intermediary in subject and object interaction, we can say that cognitive generated is completed in the intermediate link of a series of interactions. We must be clear that these intermediary link themselves are not we need to grasp the objects in the cognitive process, their existence is necessary to produce right out cognitive construction to make their own contribution. Seems an intermediate link is an informational transfer and processing station, which to the object out of information go on choice, transformation and construction of some kind to adapt to their own characteristics, and then step-by-step passed to the follow-up to the intermediate link, thus constituted a chain of step-by-step informational transformation, selection and construction. Each link in the chain, the object information will be a relatively reconstructed reproduction. The relative reconstruction took place in the interaction among before and after each successive link, and each one such an interaction is bound to make it output to the information of next link that with interaction between these two links had the color, or called each other prescriptive. Pass many each other provisions of interaction, the cognition of this place will be constructed out in the subject. Because of this starting point of chain of interaction is starting from the object, so this information state was constructed in the subject will still maintain some nature of correspondence with the object properties.

Thought-provoking of is, pass so many the chain of interactions between intermediate links was presented in consciousness the information on the object properties, "object

with that far other shore of the chain of this medium interactions What can keep what a kind of "identity" or "similarity" mean? In fact, informational selection transformation and construction in each intermediate link is a kind of recycling informational match, restructuring and comprehensive sense, which will always happen to all not can contain the informational is distorted, anomalous, aberration, distortion, lost or highlight, here, the structure is alter or remolding, create or innovation. The model of object of subjective presented in consciousness, characteristics, etc., while still maintaining a relationship with the object correspondence nature, but the model of subjective present, characteristic the specific state it is impossible with the object itself is completely the same or similar. the model of subjective present, features and the same or similar of objects, just some different structure, in the different relation corresponding levels can have greater significance and value, as for these different structure, the different relation presented concrete form and state in the subjective may be quite different with object matter. In addition, the intermediary through a specific precision or large tools, instrument or equipment that presented the scene of the cosmology things, micro-particles, in fact, the informational remolding or a new lease of on life recycled as appropriate for one's senses to grasp the macro-like state of the cosmology or micro objects of be only a person's senses that are not directly identify, before man's consciousness can be described, in such a scenario, the reality existence way of the object in the cosmology or the micro-level may with the state be present in our subjective as far apart as the sky and the sea. Because of this, have only the long-drawn-out debate of the microcosmic object is wave or a particle, and have only ultra-string theory on 11-dimensionality space-time (10-dimensionality space plus 1-dimensionality time), as well as in the ultramicroscopic scale (the Planck scale: 10⁻³³cm) existence a hypothesis of constitute universe's smallest structural unit- the "1-dimensionality strings". Based on this cognition, we would rather say: cognition constructed in the intermediate that is depending on the nature of intermediary by intermediaries that virtual cognition. Color,

sound, touch, smell, etc., are all make the information field of objects, one's senses, nerves, the brain as an intermediary, and according to the nature of these intermediaries that virtual out subject cognitive form or methods with the different relationship between object corresponding. If we say, in the human direct rely on its sense that virtual is just form and manner in activity of perception to macroscopic object the cognitive, then, in the human through complex tools to cosmology or microcosmic object go on activities of perception, as well as by thinking the informational processing creation in process of renewable information activities while virtual is not only cognitive form and manner, but also involves cognitive content itself, of course, such virtual on the cognitive content still based on the corresponding display between informational different relationship or information of perception and experience that provided relevant informational the above material.

By doing some relevant discussion, we have reason to cognition as an information construction or virtual activities in multi-level the intermediary relative movement. physiology structure of subject nerves, subject cognitive structure, as well as the subject cognitive materialized means the intermediary construct or virtual action to cognition generated, fully showing the subject initiative and creativity of the cognition took place, while the intermediary construction or virtual role of the object informational field, as well as some nature of correspondence of cognition and object properties, then also show a side of the objectivity of cognition took place.

6. Virtual reality to cognitive virtual

Because cognition is constructed in the intermediary, because there is no direct contact between subject and object, so we could have such a number of scenarios: If we only construct an intermediary information through a certain way the show assume that object, rather than to construct assumes that the object itself, and constructed so that such an intermediary information role of in our senses can give us on the assume that the object feeling and experience of real being; we can also directly to simulate the feeling

and experience of information role of assume object, rather than need to informational direct effect of assume object, but also can make feel man obtains on the assumption the object that the feeling and experience of real being; we can even design a device so that it acts on people's senses, when the person's senses arise role with certain object information, Such a device has been designed to guide feel man who may be accepted a real experience of another class object information, such devices may become converter of feeling and experience of adulterate ones. This is precisely the number of scenarios is called a "virtual reality" part of the modern technology to achieve or will have to achieve design to greater extent. Be aimed at this scenario, we can conclude that: Virtual reality is the assumption of established on object information of simulation, simulation of to specific feeling and experience, virtual of to the human cognition based on simulation conversion of to particular feeling and experience.

"Virtual actual" also is called as "Virtual reality." The "virtual" and "really" two concepts into one, it may cause people to make two completely different understanding of meaning: First, a "virtual is real," the second is a "virtual a reality" (and this Virtual reality whether of not it is reality not an understanding of this sense that can be given direct). In fact, said that "the virtual is real," or that "a virtual reality" all is not the true meaning of this "virtual reality". "Virtual reality" that virtual and is not the reality, but only information, and, in this virtual information also may not be corresponds to with a real object. Accordingly, we have reason will a "virtual reality" understanding as a "virtual information" of the information mutual distinguish with reality object directly correspond to appear

We note that extension of virtual actual concept of the broad sense may include a very wide set of phenomena, from the information field, tools, intermediary of physiology and psychological structure of subject that potential bring information recombination, distortion and a new lease on life of identification form and content for the object information, to the subject thinking created concepts information and all kinds based on pictures of drawing of subjective

idea, symbols, data, matter model of production, to all kinds of intelligent machines and their networks operations through the internal information processing that generated information, until take the human - machine interdynamic way simulate various types information of natural perception and perceptual experience information of corresponding and so on.

General, the virtual actual concept of more narrow sense refers to computer network the space creational information. Cyberspace from its most general sense talk about, can be seen as a man-made design and construction out social information world of the virtual nature, though, this social information world in essence is still the rational refraction to human reality existence world, However, this social information world, after all, is different scenarios of the sensibility, understanding reflection from the past human beings to their survival real-world. Accordingly, we have reason to this informational world in cyberspace as designed and constructed by people, the virtual world of information.

At present, a provision in specific more narrow sense, the virtual actual scope was strictly limited to a specific the scene. Mr. Zhai Zhen-ming stressed that such specific to the scenario is: "a computer as a central coordinating processor, take artificial created out stimulation together to individual sense thus making man into the system of immersion experience. The so-called immersion experience, it is a cut off from natural space, in the man-made three-dimensional visual field where image surrounded by all kinds of man-made objects but also to his own body as presence object's experience of this man-made visual field where the."¹ Mr. Zhang Yi also refers specifically to this situation to give a statement:" in technology the virtual reality refers to computer-based system and supplemented with three-dimensional image tracking device of helmet and data glove, it allows the subject to produce a feeling environment of personally on the scene. Its basic principle lies in high-speed processing

data capabilities of use computer, in timely track to deal with information of input and output on the subject sensory organ"; "The value of Virtual Reality in systems lies in can obtain and control data, through informational processing, create a virtual environment to reproduce live far from various phenomenon"; "wandering in the Cyber space, the properties of those virtual reality is nothing but a lot of information, expression way of such information is indeed logically through the symbols to be achieved. However, what its essence is information."²

The essence of virtual reality through direct simulation information environment, feel the experience, direct manipulation conversion of feel the experience, and then realize to human cognitive virtual. It can predict that, virtual reality is not only for human cognitive possible ways to open up a very bright prospect, but also help to clarify from the foundation general process and mechanisms of human cognition activities of as information activities

¹ ZHAI Zhen-ming: "Virtual Reality and Nature Reality is in the ontological sense of the equivalence" "Philosophical Researches" 2001 No. 6, p. 62.

² Zhang Yi: "Virtual Realism" "Philosophical Researches" 2001 No. 6, No. 72, 77 pp.

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