

A Study of Human Will Formation Based on Sensory Physiology

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Received: March 26, 2015

Accepted: May 17, 2015

ABSTRACT

In this paper we tried to study the formation of human Will based on the physiology of senses. To do this, first we briefly explained the process of formation of sense in living organisms. In this basis, in second part, we discussed the process of formation of human will which is the main purpose of our paper. Finally we explained most important sensory factors (cognition and sensual power) as effective ones in formation of human will.

KEYWORDS: human Will, sensory physiology, formation mechanism

1. INTRODUCTION

Human will is one of the great mental faculties, and as it was mentioned above, it is rooted in the senses. The will as same as other mental processes is internal and significant. For this reason, it acts purposeful. The creation of the senses in living creatures follows a very simple process. To create a sense, first, a connection should be somehow made between the organism and the environment. This connection is made through the sense organs. In sense organs, there are receptors which act professionally, and are able to receive some energetic changes in the environment. Physiologists and psychologists consider such changes as the physical stimuli.

When a physical stimulus stimulates the receptors of one of the sense organs, the created stimulus is turned into the sensory messages through a simple mechanical process, released as electro-chemical energy, passes the neural channels and enters the brain. In the brain, the released energy activates the neural network and affects the body function. It disrupts the internal balance of the body by making change in the relationship among the organs. By making change in the relationship among the organs, so that the internal balance of the body is disrupted. This change is felt by the organism and gradually occurred due to its emergence.

Finally, this simple physiological process allows the incoming messages to be processed by their effects on the body function, and find their meanings in the form of the sense which is created by the organism in the body. A certain sense is constant over time and does not change, because each time a certain change is occurred in the environment, it stimulates a certain sense organ and creates a certain and similar sense in the organism. On one hand, after the formation of meaningful senses and as a result of repetition and training, the living creature becomes successful to be aware of the changes in the environment and recognize them.

On the other hand, after that the senses are created, they can be combined with each other, produce a chain of recognition and make the organism aware of what is occurred in the environment. In addition, the information can be combined with the individual's previous experience, and activate the information stored in these networks in the individuals' memories.

Finally, the combination of information with each other leads to design a special program within the neural network automatically and based on the structure of the personal experience. The behavioral implementation of the program leads to the return of mental and physical balance of the organism. Sometimes it happens that the designed program cannot be implemented due to certain reasons, and the individuals are forced to wait for an appropriate chance to release this energy. Meanwhile, the will is formed and emerges as a potential energy stored in the brain. As long as the individual does not get an appropriate opportunity and condition for releasing energy, the considered will still remain active and somehow affects the individual's mental activities. In this paper our main purpose is to explain the human will formation process by relying on the physiology of the senses. First we briefly explain the process of formation of sense in living organisms. In this basis, in second part, we discuss the process of formation of human will, and finally we explain two effective factors in formation of human will.

2. The Process of Formation of Senses

From the perspective of cognitive science, the soul is rooted in senses. All mental processes act based on the senses, and when they are active, they are associated with senses. Senses help us to become consciously aware of the

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changes in our environment, and provide a more or less real map of the world around us. This map is drawn in the mind as a spatial image, and appropriate for orientating the organism in the space. After drawing the map, any sensory stimulation allows the organism to be aware of the position of the stimulation and the external factors, including objects and natural phenomena, which have caused the organism to be stimulated.

How senses are created? Physiologists believe that the various processes of the sense are as follows: first, objects and natural phenomenon affect sense organs of the body. The effects are turned into sensory messages through a simple physical process. Then, they are guided to the brain, entered the neural networks, and some of them become activated. Since these networks are consisted of living cells and their activities make changes in body function. When sensory messages are passed through neural networks they produce various senses in the brain due to the changes made in the body function. Through the senses or referring to the previous experiences, the organism can make aware of the environmental changes and gain knowledge about its environment, because one particular object or phenomenon always creates the same senses in the organism. So, the living organisms can identify or recognize the natural objects and phenomena through their effects on their own bodies. In fact, sense is the first meaningful product of the mental activity. Therefore, any conscious recognition inevitably passes through the channel. Since the senses, themselves, are the effects of the external objects on the body, it can be concluded that external objects and creatures are the main sources of all the mental faculties including free-will. Descartes(1955) believes that the senses are produced prior to the intellect and reasoning: by the senses, humans' first ideas are formed and they are allowed to use them in their arguments; therefore, all of the individuals' ideas used in their arguments are rooted in their senses. He mentioned this that the senses are summarized in the external objects.

3.The Process Of Formation Of human will based on senses

Figure 1 shows the various steps of human will formation. Human-will can be considered as one of the great mental processes, the first and main goal of which is to increase the adaptability of the organism to the environment. After investigating the issue of freedom and neural mechanisms, now we can examine the will as one another mental faculty which has a direct relationship with freedom. First of all, it should be noted that the process of Human will is the result of a kind of brain reflection. So, its neural mechanisms can be investigated through the brain function. In this brain reflection, the sensory message passes a long pathway, and data processing requires a relatively long period of time. Therefore, the process of free will is applied when there is enough time between the sensory data and final behavior for the formation of the necessary neural mechanisms. In fact, to form a voluntary behavior, the sensory messages should pass through the outermost layer of the brain or the same cortex; otherwise we will face with behaviors which are known as the reflections of spinal cord. In other words, voluntary behaviors are performed consciously. Therefore, it is possible to make change in the function of the behavior or defer it. To do this, it is enough to use the inhibitory mechanisms which are operated consciously. That is why we believe that Human will leads to the creation of a kind of freedom in humans. It should be noted that all the behaviors which are performed consciously are more or less voluntary. In fact, each action, which passes from the brain cortex, is immediately combined with the memory, and stimulates and activates the past experience which is related to this sensory message. So, the neural network which can be stimulated more than the other networks is considered to be the most suitable outlet.

According to Chauchard (1970), where neural wave are released more compactly, the impulse moves on the network, because that region has priority over other regions. At this time, the passive individuals consciously feel the effects of mutual interaction among the stimulated neural networks and assume that they are deciding freely. In fact, they do nothing but following and accompanying mental activities which act automatically. Therefore, free will can be considered as an activity which, before voluntary behavior, leads to the creation of senses which are related to select the best and the simplest outlet among the various neural networks which are able to involve in the creation of the behavior. The emergence of the senses before the voluntary behavior allows the humans to review and examine their behavioral responses, and, if necessary, improve them or even sometimes, change the movement direction. In this case, as Chauchard (1970) argued, the human's brain allows the organism to produce flexible responses which sometimes have not yet formed in the structure of the brain using its countless neurons. It should be noted that the most voluntary action which can be done by the human is to write, speak and move objects.

In fact, the passage of the neural signal from the neural networks activates them, and creates senses in the individual due to the changes made by the stimulator in the body. By experience, the senses are encoded, recognized and introduced to the individual. This gives senses meaning and allows them to emerge in the structure of emotions and feeling, and become meaningful. In fact, the produced senses allows the individuals to know the phenomena and objects based on the effects produced by them, and turn the outside world into a humanistic world with certain values and criteria. Thus, they can create both good and bad concepts from the humans' perspective. Finally, the changes, which were made in the brain, produce reactions in the individuals leading to the return of the lost balance

of the organism. The reactions are called negative feedback, because they act to deal with the made changes, lead to the return of the original natural conditions, and as a result, maintain the balance of the body's internal environment. Thus, they contribute to the survival of the individual.

According to Descartes (1955), we regulate, control and assess our will based on the physical strength as well as the present conditions of the environment, and then we act. He believes that our desires cannot be directly stimulated or eliminated by our will, but they should be made indirectly, and by imaging the objects and things, which are usually linked to our aspirations and desires, and opposed to what we do not like. For example, to strengthen our own courage and overcome our fear, it is not enough to only have will but we should convince ourselves that in case of overcoming, we will not be in serious danger or harm, and there is always more confidence in defending rather than escaping or in case of wining and conquering, glory and happiness will be brought for the human. In case of escaping, nothing but regret, shame, embarrassment, and such things will wait for us. Usually, as long as a produced lust or desire is not removed, the will remains but when one our needs are met, the stimulus, which had produced it, is eliminated, because the energy inside the will is released. In other words, with the loss of the activity of stimulating network, the related senses will be also disappeared.

When a sensory experience is connected with a number of conscious potential networks, it activates the networks. At this time, if there are not conditions for the occurrence of a shaped behavior, the stimulated networks will be in a waiting position. During this time, which is somewhat long, a type of imbalance is produced in the brain activity and its function. This imbalance is what stimulates the individuals to get rid of this imbalance state which disrupts their mind and body. Naturally, a person, who is aware of this issue and suffers from it, is looking for an opportunity to release their energy and gain their mental/physical balance or their natural balance by providing favorable conditions to create a behavior which was not successfully done. This is what emerges as a stimulus in the organism, and mainly aimed at regaining natural balance. In fact, this stimulus is the same thing which we have called free-will. Now, if next activities of the brain allow achieving rebalance, the considered network, which has led to the creation of free-will, gradually loses its activities. This leads to weaken the will and eventually remove it. In the opposite case, new experiences are used. The experiences more greatly stimulate the pre-activated network. Thus, the imbalance is exacerbated, and results in a stronger imbalance, because to regain the initial balance, the stimulus is exacerbated and this makes the individual to attempt more. According to Spinoza (1908), this stimulus concerns only about the soul; that's why it is called "will". On the other hand, as it was mentioned above, the origin and source of the things which is related to the spirit is the effects resulted from the impact of objects and natural phenomena on the body, because our ideas and thoughts are nothing but to depict tangible objects using their effects on our body. If the effects if the body are produced and regulated, it can be concluded that the existing causes for the human will can be searched in the external objects. This means that despite the fact that the organism act using free-will, it cannot be considered free. In other words, as Spinoza (1908) says, the will is not a perfect faculty but it is a *universal notion* which is made by external objects. The will is combined with the objects and sometimes, is mistakenly used instead of them. So, the will is not separate from the external objects or ideas which we have. This Spinoza's argument suggests that the main aim of the process of will formation is to increase the compatibility of the organism with the environment. Then, he added that spirit has no absolute faculty relating wanting or not wanting but it only has intentions to assert or deny certain objects and phenomena. Like desire, love, etc., the will is nothing but the ideas which we have about the known objects. The will is totally determined and controlled by the external causes. We have to make a decision which we assume that it is voluntary and optional. In reality, all of our decisions are determined and controlled by the world events and according to the universal order of cause and effect.

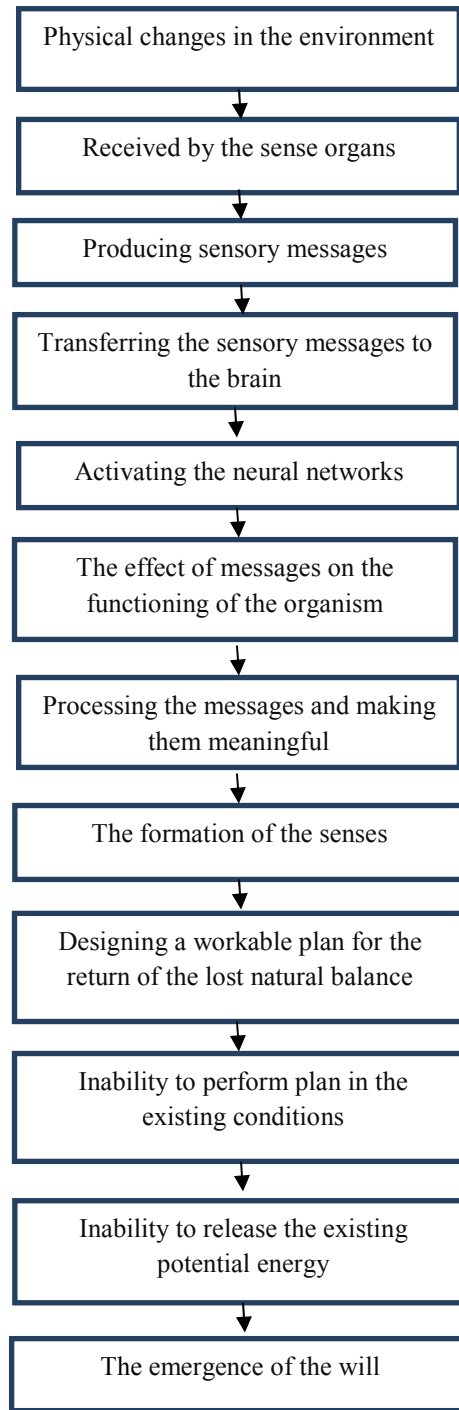


Figure 1.The process of human-will formation

4. Effective sensory factors on Human will formation

4.1. Cognition

Without cognition factor, which is the prerequisite for all mental faculties, the will can not be existed, but when it is an idea of something; the idea should be the recognition of that thing. So, the will should be based on the true recognition of things, otherwise, it can cause confusion. Spinoza (1908) stated that any mistake is due to lack of cognition which includes vague and incomplete ideas. It should be noted that this is not a new idea. Zoroaster, in the late 560 BC, raised this issue, and described it in his monotheism religion that there is no darkness by itself but it is

lack of light which appear to be darkness. So, ignorance and lack of knowledge does not exist by themselves but lack of cognition leads to ignorance.

4.2. Sensual power

Daily conflicts between the will and sensual powers help the person to know his will. In fact, the one who easily controls his/her sexual desire and manages to change the way it is accompanied, has a strong spirit. On the contrary, those who are not able to overcome the lust have a weak spirit, and do not know the right-based judgment. This type of judgment constitutes a tool which is used by the will to overcome lust. This indicates that these types of judgment are found based on a true knowledge which allows us to distinguish between good and bad. This type of cognition allows us to have a sense of accurate judgment to control and direct our lives, and use it for searching good deeds. Fortunately, people are always looking for strengthening their free-will, which helps them to overcome their roles. Despite these efforts, most of the times, the erotic power achieve success to eliminate free-will. At this time, the lusts lead to the creation of the wrong judgment which penetrates our will so deeply that even when the lusts are absent, the will continues to pursue free-will. Since then, these wrong judgments constitute parts of the judgments of the spirit and cannot be separated from it anymore.

When Descartes speaks about the will as the act of the soul to control our sexual desires, it means nothing but our rational actions which are obtained by the experience. To define the will from the perspective of Spinoza, first, it should become clear that all the creatures, living and non-living, attempt to maintain their survival. For this reason, as long as there is no external cause for threatening or destroying the creatures, they continue living by relying on their powers. Thus, humans attempt to maintain their lives and survival using their minds and souls. As it was mentioned above, the soul is a set of ideas under the effects of the body, which allows the individuals to become aware of their conducts, behaviors and efforts. According to Spinoza (1908), when the effort only has relationship with the soul, it is called "will", and when it has relationship with both soul and the body, it is called "lust". Thus, the lust is the basis and essence of man, but considering that humans act based on their minds, i.e. using cognition which is consisted of the ideas affected by the body, the essence of a man, as same as the essence of soul is consisted of theseide as which are consistent with the objects and related to the actions of mind, or they are inconsistent with the external objects and are related to the desires. The nature of the soul implies that with the help of them, we can identify the things which are useful for life, and use the will for conducting them and thus, we can use our efforts consciously to travel down the road in search of Truth.

5. DISCUSSION

In this paper we tried to explain the formation of human Will based on the physiology of senses and its effect on human life. When we aim at performing a complex movement or behavior, we facilitate the activity of a neural network in the area of a primary motor cortex. When the network is active and the related behavior is not yet appeared by the motor organs, the considered activity leads to a kind of will in us. In this case, the person should wait for the external conditions to become favorable for performing the behavior, but until reaching the right conditions, the neural network remains active. Sometimes, new phenomena increase or decrease its activity. Therefore, we can explain the formation of will through the waiting neural networks in the area of the motor cortex. There are two reasons for explaining and showing the pending and active neural networks:(1) in everyday reactions, a complex behavior can take several seconds or more, while the neural activity of the networks related to the behavior are performing very fast (about a tenth of a second). This is what explains the waiting status of the active networks in motor cortex. This activity is guaranteed by the close circuits like short-term status of human will; (2) external conditions do not allow the implementation of behavior whose commands have been developed in the brain. This case is about the long-term human will, which sometimes, the waiting can continue throughout a person's life.

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