

The Relation between Buddhist Meditation and the Autonomic Nervous System

- A talk by Gudo Nishijima -

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My theory about the relation between Buddhist meditation and the autonomic nervous system is only my supposition. But I have utilized this theory to explain Buddhism for many years, and since I first arrived at this proposition many years ago, I have yet to meet a situation where I felt that I needed to change my theory. Therefore I hope it will be of interest to you if I talk about my primitive proposition today. Of course, I am only a Buddhist monk and I don't have sufficient knowledge about physiology, psychology, and so forth to talk definitively about science and the autonomic nervous system. However, in my experience I've found it very useful to explain Buddhism on the basis of scientific knowledge, and so I would like to talk a little about my proposition today.

1. Fundamental basis

- (1) The autonomic nervous system is divided into two parts: the sympathetic nervous system and the parasympathetic nervous system.
- (2) The two parts generally function in opposite ways. For example, usually when the sympathetic nervous system (the SNS) is stronger than the parasympathetic nervous system (the PNS), people are prone to be tense, to have a weaker appetite, to suffer from insomnia, and so forth. On the other hand, when the PNS is stronger than the SNS, people are prone to feel dull, to have a strong appetite, to sleep heavily, to have higher blood pressure, and so forth.
- (3) Therefore a state in which the SNS is stronger than the PNS is not preferable, and neither is a state in which the PNS is stronger than the SNS.
- (4) My guess is that Gautama Buddha somehow realized this important fact by his experience in his sincere life. Of course, at that time there was no scientific knowledge about things like the autonomic nervous system, but I think that he intuitively understood this fact through his enormous efforts and his genius.

2. Oneness between body and mind

- (1) Buddhists believe in the theory of the oneness between our body and our mind. Therefore I became interested in learning about the mutual relation between the state of the autonomic nervous system and the human mind. After reading and learning about the autonomic nervous system I arrived at the proposition that when people have a stronger SNS they are

prone to be idealistic and when people have a stronger PNS they are prone to be materialistic.

- (2) In human society there are so many people who are very spiritual and ascetic, but sometimes they can be rather aggressive and criticizing towards other people. However there is also another type of people, and those are people who are very attached to physical enjoyments and do not like to work so much, and often tend to be pessimistic and hesitant.
- (3) When I was young I read two books by an American psychiatrist named Karl Menninger. One was called "Man against Himself" (Harcourt, 1938, 1956) and the other was "Love and Hate" (Harcourt, 1942).

In the book "Man against Himself", Karl Menninger explains the psychology of a person who commits suicide. The author says that a person who commits suicide is not a weak person, but is usually a very strong and aggressive person. But for some reason, when his or her aggressive attack against other people fails, he then directs the attack against himself or herself. When I read this description, I had to agree with Dr. Menninger's opinion.

In the book "Love and Hate", Dr. Menninger insists that if we want to be healthy in body and mind, it is necessary for us to maintain an equal balance between love and hate. Before that time I was taught that only love is valuable, and that hate should be avoided, but when I read Dr. Menninger's ideas in this book, I could not disagree with his opinion.

- (4) In Buddhism we believe that it is not good to be emotional, and so we should not be angry or greedy and so on. When I compare such teachings with the theory of Karl Menninger, I can notice the reason why Gautama Buddha recommended us to follow the Middle Way.

3. Buddhism and the Autonomic Nervous System **

- (1) A fundamental principle of Buddhism is that it denies both idealistic belief and materialistic belief. This suggests that we should avoid having both a state where our SNS is stronger than our PNS, and also a state where our PNS is stronger than our SNS.

We can say that ideas represent only the motion of our brain cells, and therefore they are not real in themselves. Likewise we can say that sense stimuli just represent excitement in our sense organs, and so they also are not real in themselves either.

- (2) Therefore I think Buddhism emphasizes the importance of equality or equilibrium between our SNS and our PNS. In Buddhism there is a Japanese phrase, *Jijuyo Zanmai*, which explains the state in Zazen. The word *Jijuyo* is divided into two parts, one is *Jiju* and the other is *Jiyo*. *Jiju* means "to accept self," and *Jiyo* means "to utilize self." The word *Zanmai* refers to the state in Zazen. My interpretation is that the words "to accept self" suggest the function of the PNS, and the words "to utilize self" suggest the function of the SNS. So I think that *Jijuyo Zanmai* means a state of equality between the SNS and the PNS.
- (3) But it can be very difficult for us to make our autonomic nervous system balanced, because our autonomic nervous system originally has a function of autonomy. However, I think that fortunately Gautama Buddha presented us with a very effective and calm method to make our autonomic nervous system balanced, and that method is the practice of Zazen.
- (4) But why does Zazen have such excellent power? For many years after I started studying Buddhism I didn't know the reason. Then about 10 years ago, because of the

recommendation of my student named Mike Cross, I read a book entitled “A Teacher’s Window into the Child’s Mind” (Fern Ridge Press) by Sally Goddard, an American psychiatrist and teacher.

In her book she explains that the important term of development in our human life is the first 7 or 8 years after birth, and in particular, the first 15 months. She says that if a child receives some unfortunate influence during that important time, the child will suffer rather serious effects on his or her personality, and it will be very difficult for the child to get rid of those bad effects during his or her life. However she says that, “Ultimately, the cerebellum (a neural structure in our brain) is responsible for regulating the postural reflexes and muscle tone, and thus maintaining the body’s equilibrium.” By reading Ms. Goddard’s book I could get an outline of the reason why Zazen is useful in making us better.

4. The meaning of Zazen

- (1) Zazen is not a means to attain “enlightenment,” but is just an act to experience the balance of our autonomic nervous system.
- (2) Zazen is just a practice of keeping our spine straight vertically in a regular posture.
- (3) The state in Zazen is called *Shinjin Datsuraku*, which means, “dropping off body and mind.” When we think about the meaning of the phrase “dropping off body and mind,” we can interpret that when our autonomic nervous system is balanced, the balance of the autonomic nervous system can be felt like plus/minus zero. So we sometimes feel that our consciousness of our body seems to be zero, and our consciousness of our mind also seems to be zero. That state is called “dropping off body and mind.”
- (4) Therefore, by practicing Zazen every day we can become accustomed to having balance in our autonomic nervous system, and in my opinion that state is also the state of Buddhas.

** You can find some more information about how meditation activates control of the autonomic nervous system on the following webpages:

1. Central and autonomic nervous system interaction is altered by short-term meditation:

<https://www.pnas.org/doi/full/10.1073/pnas.0904031106>

2. Cardiovascular and nervous system changes during meditation:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4364161/>

3. About Your Nervous System: Calming Your Nerves & Heart with Meditation:

<https://mindworks.org/blog/meditation-autonomic-nervous-system/>