

## HOW THE MIND WORKS

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The title for today's discourse is "How the mind works." Maybe the discourse should be on "How to make the mind work," because for some of us, the mind isn't working! Perhaps if we try to inquire into how the mind works, maybe we will also understand how to make the mind work.

The first question is: what exactly is mind? Is it a noun? or is it a verb? Actually, this is not a simple question. Philosophers have been pondering over it for centuries and they are still pondering without having come to any conclusion about it. In fact, if you take out any university calendar, the academic program of the philosophy department will invariably carry a course entitled, 'Philosophy of Mind.' The question here is where does mind begin and matter end? How is it possible that consciousness animates the mind and the brain? Believe it or not, but it is really the chicken and the egg question that has been given academic status: has the brain produced the mind, or has the mind produced the brain? Some scholars define the mind as "what the brain does," but to me, I can't see how this is different from the definition of an egg as "what the chicken lays." It is curious in how many disguises the chicken and the egg question appears and it is even more remarkable how many academics have written on this subject and have obtained tenure through such writings!

If we consult the dictionary and look up the word 'mind', we find under the heading of 'noun' the following: intellectual potentiality, soul, spirit, intellect, brain, consciousness, thought, mentality, intuition, perception, conception, intelligence, judgement, understanding, wisdom, reasoning, instinct. Under the heading of 'verb', we find: to obey, to heed, to give one's attention, to be careful, to be concerned, to remember, to recollect.

This preliminary consultation with the dictionary, already gives us an idea of how complex the question is. This question of what is mind and how it works is a subject of intense research in many departments of human knowledge at present ranging from psychology and neurology, to artificial intelligence and computer science, philosophy and even mathematics. In fact, there was a book written recently by a noted scientist from MIT with this title and the author humbly begins by saying, "We don't know how the mind works." It is a mystery. The book is a compendium of theories that the author admits he has put together for further scrutiny. It is a remarkable fact about the mind

itself that whatever it tries to understand, even though it may be difficult, the sheer effort put in that direction, is never in vain. Some understanding does emerge. This too is a mystery of the mind.

So let us begin our inquiry into what the mind is and how it works and see if we can come to some sort of understanding. The situation is somewhat comparable to driving a car. It is not necessary to know how everything in the car has been put together, where the car was manufactured. At least for our immediate purpose, we have to know merely how to drive the car, how to get around. So even though the question of what mind is and how it works is a complicated one that academics have been debating for centuries, it is essential that each one of us have some knowledge of how it works so that we can carry on with our daily work. But as students of Vedanta, we have to go a bit deeper into it than that. Because for us, it is not mere day to day existence. For us, our life has a larger purpose and meaning and we must journey through the ocean of life with that goal in view.

In the Maitri Upanishad, named after the sage Maitri, we find the following: “By austerity (*tapas*) one achieves goodness. Through goodness, you can take hold of the mind. Through the mind, one can realise the Self. As fire, when its fuel is spent, comes to rest in its source, even so the mind, when the thoughts are silenced, the mind returns to its own source. The mind is the key. Here is the eternal mystery. What you think, that you become.”

*yac cittas tan-mayo bhavati guhyam etat sanatnam, Maitri Up. 6.34.3.*

This is the verse I would like to expand upon in this discourse since, I feel it is central to the understanding of Vedanta. In this context, it is interesting to note Sri Ramakrishna’s teaching. He said, “The mind is like a laundered cloth. It takes the color of the dye you dip it in.” The essential idea being conveyed is that whatever thought we hold, the mind tries to take the shape of that thought, or become that thought as it were. Through that process, we gain understanding. It is a deep psychological principle that I would like to elaborate upon later in the discourse.

In trying to understand the mind, we may begin by analysing what we know it does. For example, we say, ‘the mind perceives.’ So let us first begin with perception. What happens when we see a tree? Light falls on the tree and is reflected off of it. These reflected rays of light enter the pupil of my eye and then pass through the lens, which focuses an

inverted image of the tree on the retina producing some physical and chemical changes there. Is this ‘seeing’? No, because if I were unconscious and had my eyes opened, the same image would be focused on the retina. Thus, something more is needed for perception. The retina is a highly sensitive surface of closely packed receptors of about 10 million cones and a 100 million rods. When light from the tree falls upon them, they begin firing impulses to the optic nerve which then transmits them to the visual cortex in the brain. Thus far, everything is just physics and chemistry. But where does the “greenness” of the tree come in? The brain itself is grey and white. So where does colour come from? If the brain is enclosed, where does light come from into the brain? It doesn’t. All that the brain receives is a set of nerve impulses. Somehow, these impulses are mysteriously re-assembled and arranged so that we perceive colour, shape and movement, all in three dimensions.

In this process, we can recognize at least three components: first, the sensory perception, second, the nervous impulse and third, the reconstruction of the pattern in the brain. So far, even the computers are able to replicate this. All electrical impulses are digitalized, that is, changed into numbers. More precisely, they are changed into a string of zeros and ones. Compact discs, for example, are digitalized sound, that is, sound made into a sequence of zeros and ones. Modern computers are able to replicate human perception to some extent. This research has enabled the deaf to hear, the blind to see and the dumb to speak. However, we are still very far from understanding even a physical a process as perception.

To illustrate the complexity, consider the sentence, “sugar is sweet and white.” The tongue knows only sweetness, not whiteness, and transmits this knowledge as a nerve impulse to the brain. The eye knows only whiteness, not sweetness, and transmits this aspect to the brain. Thus, there must be another internal mechanism that can put together these two, unify them, and more importantly, give meaning to it. And this raises the question: “what is meaning?” But before we go into that, I want to point out that we have deduced from our analysis of sensory perception alone, that there must be internal mechanisms, or internal organs that can combine two or more of our sensory inputs and give meaning to it. If you do the math, (as they say), you will come up with 31 such combinations, or internal senses, if you want to call them that, and these senses are of a synthesizing nature. The replication of smell, taste and touch are still unsolved problems in the theory of artificial intelligence, so what to speak of these 31 interior sensory organs! Thus, our knowledge of the physical process of what we call perception, is still very much

in its infancy.

We must understand that analysing the brain is not the same as analysing the mind. We must first distinguish between the mind and the brain. The brain is the physical organ with which the mind is somehow intertwined. Medical science has advanced to a state that it knows approximately the role of some parts of the brain. These are advances in neurology. It is now known that certain parts of the brain are connected to specific neurological functions. This is true of the sensory process as we have observed above. But is it true of thinking? Is thinking a physical process? Can it be explained in terms of physics and chemistry? What about feeling?

In his book, *The Mystery of the Mind*, Canadian neurologist, Wilder Penfield, tries to explore the thesis that thinking and feeling are activities of the brain and if they can be explained in purely physical and chemical processes. He found that gently stimulating certain regions of the brain with electricity triggered flashbacks of memory in some conscious patients. One patient said she could hear instruments playing a melody that she heard in childhood. Penfield writes, “I re-stimulated the same point thirty times trying to mislead her ... she heard the melody each time. It began at the same place and went on from chorus to verse.”

In another experiment, he writes, “I began to show a patient a series of pictures and he named each picture accurately. But when I showed him the picture of a butterfly, and applied an electrode to the speech cortex, he remained silent.” The patient explained afterwards that he knew it was a butterfly but couldn’t say it. From this, Penfield concludes that the faculty which controls speech is not in the brain. Similar experiments led him to conclude that reasoning, the faculty of comparison, is not a neurological activity. Neither were feelings. Feelings could be revived from memory, but no new feelings could be initiated by applying electrodes to the brain. Meaning could not be reduced to a physical process. Thus, Penfield concludes, there is a clear distinction between the brain and the mind.

I recall when I was a student at MIT, I discussed this experiment of Penfield with Swami Sarvagatananda and Swami had an insightful summary of Penfield’s research. He said, “The brain is like the computer, the mind is the programmer and thought is the programming instruction.”

Here then we come to the important role of thought in our life. It is said that “thought builds the universe.” Everything that we see around us is the manifestation of thought.

We may not be able to define what thought is. But we all know that thought is a powerful force that we must contend with on a daily basis. We know the influence thought has over us.

In his “Inspired Talks,” Swami Vivekananda writes, “We are what our thoughts have made us; so take care of what you think. Words are secondary. Thoughts live, they travel far. ... Each thought is [like] a little hammer blow on the lump of iron which our bodies are, manufacturing out of it what we want to be. We are heirs to all the good thoughts of the universe if we open ourselves to them. ... Each thought has two parts - the thinking and the word. Neither idealists nor materialists are right; we must take both idea and expression.”<sup>1</sup>

Thought does have power. How it operates within us is still a mystery. But it is an acknowledged fact, by all of us, that it does operate as a force. We all know the power of thought in our own life. Whatever talent we have, whatever proficiency we have gained, whatever understanding we may possess of anything or anyone, it is because of our thinking. This is the essence of education. As Swami Vivekananda writes, “We are heirs to all the good thoughts of the universe if we open ourselves to them.”

A single thought by itself maybe as flimsy as a snowflake. But the same thought or species of thoughts repeated enough slowly accumulate, as snow accumulates, and soon enough, we have a habit. The age-old proverb, “Sow a thought, you reap an act. Sow an act, you reap a habit. Sow a habit, you reap a character. Sow a character, and you reap a destiny.” This summarises it all. So everything begins with thought and that thought gains power through repetition. So this brings us to an important law of the mind: the power of repeated thought. Repeated thought slowly leads to habit and we become a bundle of habits. It is said that we first make our habits either consciously or unconsciously, and then our habits make us. From this, we see the truth of the aphorism that a habit can be the best of servants or the worst of masters, depending on what kind of habits we have cultivated.

Nowhere is the law of habit more effectively described as in the Bhagavadgita by Sri Krishna. The famous verses (2.62-63):

*dhyayato visayan pumsah sangas tesu pajayate*

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<sup>1</sup> Complete Works, Vol. 7, pp. 14-21.

*sangat samjayate kamah kamat krodho bhijayate  
krodhad bhavati sammohah sammohat smritivibhramah  
smritibhramsad buddhinaso buddhinasat pranaswati*

“By thinking about sense objects, attachment to them is formed. From attachment, arises a desire to possess them. When this is not gratified, anger comes. From anger, comes confusion. From confusion, loss of memory. From loss of memory, the destruction of intelligence. From the destruction of intelligence, one perishes.”

When we think back to the time this great teaching was pronounced, it is remarkable, since it expresses one of the most important of psychological laws. Modern psychoanalysis has exposed that anger is a manifestation of repressed or suppressed desire. Modern medicine has also established through clinical evidence the damage that can be caused to the internal physiology by excessive anger. In all forms of conflict, when we analyse them carefully, we find the truth of these verses of the Gita. How often is it the case, that in moments of anger, we are confused and issues that have no bearing on the circumstance are brought in only to add further confusion. From such confusion, we forget many things, the purpose of our life, our roles, our goals, and most importantly, that we must co-exist peacefully with others.

Swami Vivekananda writes in his inimitable humorous style, “How hard it is to control the mind! Well has it been compared to the maddened monkey. There was a monkey restless by his own nature, as all monkeys are. As if that were not enough, someone made him drink freely of wine, so that he became still more restless. Then a scorpion stung him. When a man is stung by a scorpion, he jumps about for a whole day; so the poor monkey found his condition worse than ever. To complete his misery a demon entered into him. What language can describe the uncontrollable restlessness of that monkey? [Pause] The human mind is like that monkey, incessantly active by its own nature; then it becomes drunk with the wine of desire, thus increasing its turbulence. After desire takes possession comes the sting of the scorpion of jealousy at the success of others, and last of all the demon of pride enters the mind, making it think itself of all importance. How hard to control such a mind!”<sup>2</sup>

The law of habit is a scientific law. Whether it is a good habit or a bad habit, its operation is the same. This understanding therefore can lead us to form good habits. In

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<sup>2</sup> Complete Works, Vol. 1, p. 174.

fact, our virtues, our talents are really our good habits. We fashioned them using our own hands. In this connection, we can be inspired by looking at the great minds of the past. This is what Vivekananda means when he says that we are heirs to all the great thoughts of the past if we open ourselves to them. This opening ourselves to the great thoughts is really the essence of education.

Here then, we find the value of study. But this study must inspire and we often find in life that it is life that inspires life. Thus, a study of great lives energizes the mind and gathers it for the purpose of concentration. The great Isaac Newton used to say, “If I have been able to see this far, it is because I have stood on the shoulders of giants.”

I remember that when I was studying the life of Mahatma Gandhi, he related the time he was studying to be a lawyer and that he had rather slovenly study habits. He writes, “I used to attend High Court daily while in Bombay, but I cannot say that I learnt anything there. I had not sufficient knowledge to learn much. Often I could not follow the cases and dozed off. There were others also who kept me company in this, and thus lightened my load of shame. After a time, I even lost the sense of shame, as I learnt to think that it was fashionable to doze in the High Court.”<sup>4</sup> If a person like Gandhi started out like this and changed the course of his life by changing his habits, there is hope for all of us. That is the value of studying the lives of great people.

When we go to school or a university, or when we simply pick up a great book to read, we are connecting ourselves to a stream of thought to be energized and vivified by it. From generation to generation, humanity has valued thought greatly that it has tried to preserve it and hand it over to the next generation. This is what is called “teaching.” In fact, in the Samkhya system of philosophy, it is recognized that a steady stream of knowledge has always been flowing. This mighty river of teaching can be traced back to time immemorial. In Patanjali’s yoga sutras, we find, “Isvara is the Teacher of even the ancient teachers, being not limited by time. Its manifesting word is Om.”

In many of the Upanishads, and even in the Bhagavadgita, we find a recitation of how the teaching had been handed down from generation to generation. The sages were astutely aware of the mighty stream of teaching. This awareness is a powerful motivation for sustaining purpose and keeping the mind focussed. This is what Patanjali means by “devotion to Isvara.”

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<sup>4</sup> M.K. Gandhi, Experiments in Truth, p. 80.

As most of you know, in Indian mythology, the great God Siva or Mahadeva symbolises Isvara. The river Ganges is said to flow from his head and this represents the river of knowledge or the river of teaching. The goddess of learning is called Saraswati, and literally means, ‘she of the stream, of flowing movement.’ Sri Aurobindo adds, “It is a natural name both for a river and for the goddess of inspiration.”<sup>5</sup>

Thus, awareness of this timeless tradition of teaching is really “devotion to Isvara” according to Patanjali. What is gained by this devotion? Patanjali says, the mind is brought under control and it is easier to form good habits through this devotion. Mental obstacles are not destroyed by direct confrontation, but rather by devotion to the “mighty river of teaching and example.” This is corroborated by daily experience. Attention is like a magnifying glass. When we give attention to anything, that very thing becomes magnified. Thus, the way to diminish the effect of mental obstacles is to keep focussed on the goal through devotion.

Returning to Mahatma Gandhi, he writes in his autobiography, that one day, he decided to put an end to his sloppiness and inherent laziness. “I had made it a rule to walk to the High Court. It took me 45 minutes and of course, I invariably returned home on foot. I had inured myself to the heat of the sun. This walk to and from the court saved a fair amount of money, and when many of my friends in Bombay used to fall ill, I do not remember having once had an illness. Even when I began to earn money, I kept up the practice of walking to and from the office and I am still reaping the benefits of that practice. ... I believe that no matter what amount of work one has, one should always find some time for exercise, just as one does for one’s meals. It is my humble opinion that, far from taking away from one’s capacity for work, it adds to it.”<sup>6</sup>

It is curious that thinking is extolled as the main function of the mind. However, thinking is only one of its faculties. There are others, such as feeling, willing and restraining. In the ancient Indian philosophical tradition, these four faculties were given special attention. The question was asked how these four faculties can be sharpened and refined and taken in a higher direction. The age of reason can be said to have begun with the exercising of thinking, of questioning, of inquiry into the nature of things. The three other faculties must be raised to the same level of refinement. These four faculties are in every

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<sup>5</sup> Sri Aurobindo, *Collected Works*, Vol. 10, p. 88.

<sup>6</sup> M.K. Gandhi, *Experiments in Truth*, p. 81 and 195.



individual. The four yogas, namely, jnana yoga, bhakti yoga, karma yoga and raja yoga, address this question of how we may refine these faculties of the mind and take them in a higher direction.

Swami Sarvagatananda has taught us long ago that these four yogas are like the four-wheel drive. The analogy is very apt. I began this discourse by saying that we need not know how a car was manufactured or how it works in order to drive the car. With respect to the mind, we are somewhat in the same position. We may not know exactly how the mind works, which neural networks and neuro-transmitters are firing at any given moment, or whether the brain has produced the mind or the mind produced the brain. But we do need to know how to steer this mind through the highways of life and how to reach our destination.

Bhakti or devotion is a powerful force. No one can deny the strength of human emotion. But human emotion is not something to be rejected, as many of the medieval saints and philosophers tried to do. As we all know, the very thing we try to reject comes back to us with re-doubled force. This is a well-known psychological law that we are all familiar with. The secret is to give this force a higher direction. This is the essence of bhakti yoga.

Love is dynamic. It is a curious fact that love manifests through interest and attention. For example, at first, we may not be interested in mathematics, let's say. But as one pays attention, and tries to get interested in it, love emerges and this love generates will power. This brings us to the faculty of willing. Karma yoga is the method by which this faculty can be given a higher direction.

We all have to work in this life. There is no escaping from that. However, many of us fritter away our energies and work with only half the attention and half the heart in it. We teach our children not to work half-heartedly. What does it mean? It means that we should work with full devotion and full concentration.

In a recent study of Olympic athletes, it was found that those who had performed well in the past tended to falter from their Olympian height, as it were. Their performance waned and it turned out that the underdogs, the younger ones on the team, from whom nothing spectacular was expected, did much better and many secured gold medals for the team. When interviewed, many of the veteran Olympian athletes said they were under tremendous pressure to perform well and this pressure and expectation, led to a faltering

of concentration. Whereas in the case of the younger newcomers, nothing was expected of them and they were not under the same pressure. That lack of pressure enabled them to perform at their peak levels. What does this show?

This means that many of us fritter away our energies in other directions, sometimes without even being aware of other pressures and distractions. So there is an art of working where we can focus our mind wholeheartedly and not be disturbed by other factors. Sri Krishna teaches Arjuna in the Bhagavadgita that “to work, we have the right, but not to the fruits of work. Let not the fruits be your motive.” (2.47)

*karmany eva dhikaras te ma phalesu kadacana  
ma karmaphala hetur bhur ma te sango'stv akarmani*

“To action alone hast thou a right and never at all to its fruits; let not the fruits of action be thy motive; neither let there be in thee any attachment to inaction.”

Many people ask how this is possible? If we are not motivated to win, how can we win? How can we perform? These questions are addressed by Swami Vivekananda in a brilliant essays entitled, “Practical Vedanta.” He writes, “The secret of work is intense activity, but in the midst of it, eternal calmness. ... Inactivity, as we understand it in the sense of passivity, certainly cannot be the goal. Were it so, then the walls around us would be the most intelligent; they are inactive. Clods of earth, stumps of trees, would be the greatest sages in the world; they are inactive. Nor does inactivity become activity when it is combined with passion. Real activity, which is the goal of Vedanta, is combined with eternal calmness, the calmness which cannot be ruffled, the balance of mind which is never disturbed, whatever happens. And we all know from our experience in life that that is the best attitude for work.” (Complete Works, p. 292-293.)

In this passage, we must understand what Swami Vivekananda means when he says, “Inactivity does not become activity when it is combined with passion.” We all know from experience that what is being referred to is the wasting of energies that we normally do by building, what are called, “castles in the air.”

In Indian mythology, there is a nice story which illustrates this point. Kamadhenu is the mythical cow that lives in the celestial regions. One day it comes to graze on planet earth and a poor farmer notices it grazing on his field. He catches hold of its tail, but Kamadhenu can fly, so it soars to the sky. This farmer who has grabbed its tail also soars to the heavens with it. Once there, he finds to his amazement a veritable feast of desserts,

rich, ice cream cakes which are the length of a football field. He feasts to his heart's content and is quite satisfied. But then, he suddenly awakes. He thinks its a dream but finds that his stomach is full, so it couldn't have been a dream. The next day, Kamadhenu comes again to his fields to graze and the same thing happens, he goes to the heavens and has a feast of desserts. The third day, he tells all his friend about all the wondrous desserts and cakes. They devise a plan. The farmer will grab hold of Kamadhenu as before and his friend will grab hold of his foot and both of them will be propelled to the heavens. As they expected, Kamadhenu comes as usual to graze on the fields. The farmer grabs hold of Kamadhenu's tail and his friend grabs hold of his foot. En route to heaven, the friend cannot restrain his eagerness and asks, "Can you tell me again how big those ice cream cakes were?" And the farmer replies, "Yes, they were the size of a football field and they were that big," and stretches out his hands. Both of them fall back to planet earth and that was the end of that!

Swami Vivekananda amplifies the message as follows. "The calmer we are, the better for us, and the more amount of work we can do. When we let loose our feelings, we waste so much energy, shatter our nerves, disturb our minds, and accomplish very little work. The energy which ought to have gone out as work is spent as mere feeling, which counts for nothing. It is only when the mind is very calm and collected that the whole of its energy is spent in doing good work. And if you read the lives of the great workers which the world has produced, you will find that they were wonderfully calm men. Nothing, as it were, could throw them off their balance. That is why the man who becomes angry never does a great amount of work, and the man whom nothing can make angry accomplishes so much. The man who gives way to anger, hatred, or any other passion, cannot work; he only breaks himself to pieces, and does nothing practical. It is the calm, forgiving, equable, well-balanced mind that does the greatest amount of work." (Complete Works, Vol. 2, p. 293.)

This brings us to the faculty of restraining. Patanjali says that yoga is the restraining of the mind and preventing from taking various thought forms.

*yoga chittavritti nirodah.*

"Yoga is restraining the mind stuff from taking various forms." What does this mean? It means that we have to reflect. We cannot simply react to events. If we observe carefully, there is a part of us that is always observing what we do. We must examine ourselves and

bring in this higher awareness. When we do, we are reflecting. A wave of anger comes, and instead of reacting and giving into anger, we can change it. We can bring in the opposite feeling.

Thus, in dealing with the mind, all four faculties must be unified through the four-fold yoga, and this makes the task of controlling the mind much easier. The controlled mind becomes our friend, our companion in life. May we all gain purity of mind and reach the ultimate goal of supreme awareness and realize the light of Brahman within. This is my prayer.