

## LECTURE - 5

### SPIRITUALITY, POSITIVE ATTITUDE AND SCIENTIFIC TEMPER

In today's world the whole planet has been facing conflict and tension for decades now. The great strides made by science have led towards comprehensive understanding of the laws governing nature and the universe. The increasing advances of technology, especially in communication and healthcare, have provided us beautiful, sophisticated gadgets to make our lives easier, as well as great surgical procedures and medicines to cure and treat innumerable diseases and debilitating conditions. In spite of all this, we see that there is an existential crisis in society today because of the lack of purpose or direction in human lives. This reminds us of Einstein's assessment: "A perfection of means, and confusion of aims, seems to be our main problem."

If ancient spiritual wisdom is the thesis, then modern science devoid of any influence of spirituality is its antithesis. But we hope to achieve a synthesis, of these two supposedly conflicting elements of science and spirituality. That will pave the way for great human progress and build a future which all generations to come will appreciate.

#### What is spirituality?

It has become quite popular in recent years to distinguish between spirituality and religion. The term "spiritual" is now frequently used in contexts in which the term "religious" was formerly employed. 'Religion' is an institution established by man to exert control and instill morality but 'Spirituality' is born in a person and develops in the person. It may be kick started by a religion, or it may be kick started by a revelation. Spirituality extends to all facets of a person's life. True spirituality is something that is found deep within oneself. It is one's way of loving, accepting and relating to the world and people around. Acts of compassion and selflessness, altruism, and the experience of inner peace are all characteristics of spirituality.

There is not one religion, but hundreds but there is only one type of spirituality. Spirituality is for those that lend ears to their inner voice and spirituality gives you the light to find *God* in your inner self. Spirituality has been defined in numerous ways. These include:

- a belief in a power operating in the universe that is greater than oneself,
- a sense of interconnectedness with all living creatures, and

- an awareness of the purpose and meaning of life and the development of personal, absolute values.

Now-a-days people are becoming interested in the role of spirituality in their health and health care. This may be because of dissatisfaction with the impersonal nature of our current medical system, and the realization that medical science does not have answers to every question about health and wellness.

Those who speak of spirituality outside of religion often define themselves as *spiritual but not religious* and generally believe in the existence of different "spiritual paths," emphasizing the importance of finding one's own individual path to spirituality. According to one 2005 poll, about 24% of the United States population identifies itself as spiritual but not religious.

### **CHARACTERISTICS OF A SPIRITUAL PERSON**

Spirituality has seven main characteristics:

1. A spiritual person continuously strives for perfection, perseverance and stability. In his all thinking, speech and actions he tries to be accurate, precise, clear and perfect. This applies to everything he does.
2. A spiritual person has a wholehearted dedication to his labour, without counting hours and days, without holding various expectations in his heart, and without giving up in front of difficulties.
3. A spiritual person lives by his conscience as no one can transform himself without following the voice of his conscience.
4. The spiritual person has an inclusive and expanding approach to all issues of life. He is broad minded and tolerant and he looks at all issues of life from many viewpoints. He has no religious, dogmatic, traditional racial or national barriers in mind.
5. A spiritual person believes in the law of cause and effect and carries out all his activities, speech and thoughts accordingly.
6. The spiritual person lives in realization that he is an immortal spiritual being, charged with the power of unlimited creativity.
7. The spiritual person is aware that his victory is measured by the joy that he has in his heart. His joy comes from the memories in his heart that he did his best to serve, uplift, transform and encourage people around. It is the joy of sharing his love and wisdom.

## HOW DOES SPIRITUALITY INFLUENCE HEALTH?

Spiritual practices tend to improve coping skills and social support, foster feelings of optimism and hope, promote healthy behavior, reduce feelings of depression and anxiety, and encourage a sense of relaxation. By improving stressful feelings and promoting healing ones, spirituality can positively influence immune, cardiovascular (heart and blood vessels), hormonal, and nervous systems. Qualities like faith, hope, and forgiveness, and the use of social support and prayer seem to have a noticeable effect on health and healing.

- **Faith:** A person's most deeply held beliefs strongly influence his or her health. Some researchers believe that faith increases the body's resistance to stress.
- **Hope:** is a positive attitude that a person assumes in the face of difficulty -- many people become depressed and prone to illness.
- **Forgiveness:** A practice that is encouraged by many spiritual and religious traditions, forgiveness is a release of hostility and resentment from past hurts.
- **Love and Social Support:** A close network of family and friends that lends help and emotional support has been found to offer protection against many diseases. Researchers believe that people who experience love and support tend to resist unhealthy behaviors and feel less stressed.
- **Prayer:** The act of putting oneself in the presence of or conversing with a higher power has been used as a means of healing across all cultures throughout the ages.

## SCIENTIFIC TEMPER

**Scientific temper** describes an attitude which involves the application of logic and the avoidance of bias and preconceived notions. Discussion, argument and analysis are vital parts of scientific temper. It is thus necessarily open- admitting every point of view, however offensive it might be, or where it comes from. Elements of fairness, equality and democracy are built into it.

## CHARACTERISTICS OF SCIENTIFIC TEMPER

Scientific temper or scientific attitude is characterized by following traits:

### (i) **Healthy skepticism /doubt**

The attitude of healthy skepticism implies that you do not accept others' assertions unless these are logical, rational and supported by proper evidence. It is an antidote to the unsuspecting, taken-for-granted attitude which accepts things merely on the basis of authority or tradition. In ancient Greece, many believed on Aristotle's authority that

males and females have different number of teeth, without ever verifying this for themselves. This was clearly against this basic tenet of scientific temper. Skepticism, taken in its widest sense means that you do not even have to necessarily 'believe' in the evidence provided. You can redo the experiments yourself and determine whether the evidence is trustworthy. Scientific temper prohibits acceptance of evidence which is not reproducible by others, and is claimed to be the exclusive prerogative of a select few.

**(ii) Universalism**

Universalism is another important characteristic of scientific temper. Naturally, there is no place for prejudice or bias, for otherwise the conclusions cannot be universal. The observations have to be objective. You observe things as they are, without trying to manipulate these to fit in some pre-conceived worldview. This also demands an open mindedness, willingness to change conclusions in the light of reliable evidence and humility, freedom from pride and arrogance, which comes from realization of limitations of our intellect and ever broadening horizons of knowledge.

**(iii) Freedom from prejudice or bias**

**(iv) Objectivity**

**(v) Open mindedness and humility**

**(vi) Willingness to suspend judgment without sufficient evidence**

**(vii) Rationality**

**(viii) Perseverance - positive approach to failure**

The characteristic of all decision-making by a person with "scientific temper" is logic and rationality. Perseverance is another important characteristic of scientific attitude, for even the "flash of insight", which characterizes many great scientific achievements, usually follows hard toil and reflection on the problem for long periods of time. To put it in the words of Thomas Elva Edison science is, "*99% perspiration and 1% inspiration*".

There are numerous instances of scientists' years' effort at solving a problem resulting in failure. But such failure is often seen in a positive light. Dr. Paul Ehrlich, 1908 Nobel Prize winner in medicine developed the treatment of syphilis after 605 unsuccessful attempts. In fact he called his discovery, Salvarson as "606". Clearly, his 605 "failures" had contributed to the medical research by providing the necessary clues that led to the discovery of the correct formula. Viewed in this perspective, scientific temper becomes an attitude, a way of life.

## SCIENTIFIC TEMPER AND INDIAN CONSTITUTION

Scientific temper is an attitude of logical thinking. If a person uses the scientific method in his daily life decision making process knowingly or unknowingly, then we can say that he has scientific temper. This scientific temper is important in our life because this kind of attitude enables general public for making their decisions rational.

Therefore, for the overall development and growth of the country and society, it is necessary to develop scientific temper among all the people irrespective of their age, caste, creed, religion etc. Our first Prime Minister, Pandit Jawaharlal Nehru was very fond of using the term Scientific Temper. He was keen that we should not learn science superficially' i.e. just the facts of biology or chemistry and physics. He wanted people to possess scientific temper so that they could be better scientists, better citizens and capable of governing their personal thoughts and actions in a scientific manner. The importance of developing scientific temper is very clearly established by the fact that it is one of our fundamental duties to develop scientific temper and spirit of inquiry amongst fellow citizens "**To develop scientific temper**" is one of the fundamental duties of the Indian citizens, according to the Constitution of India. This may be the reason why the concept of "Scientific Temper" was built-in in our constitution.

- **Article 51 A** of our constitution which deals with fundamental duties makes it a duty of every citizen to develop a Scientific Temper.
- **Article 51 A** of our constitution also makes it a duty of every citizen to develop Humanism & spirit of enquiry and reform.

It further makes it duty of every citizen to abide by the constitution and respect its ideals and as we know secularism is one of the most important ideals of our Constitution. Secularism, Humanism & Spirit of enquiry and reform are directly related to Scientific Temper. It is the Scientific Temper that helps in developing Secularism, Humanism & Spirit of enquiry and reform.

Therefore, this is a good enough reason for us to, first of all, find out what exactly is Scientific Temper, and then to try and cultivate it. But, even though it is important to carry out the duties laid down in the constitution, there are reasons other than formal and legal for understanding and practicing Scientific Temper. If we have a Scientific Temper, we can understand and solve our problems with much less difficulty or stress, and we would be reasonable in our decisions and creative in our activities.

Though the country today can claim in various spheres like atomic energy, space and telecommunication, technological excellence, it is a matter of regret that the Scientific Temper among the general public, more so with the educated public has not progressed to the desirable degree. It should be realized that our education, especially our school education has not generated this critical spirit of Scientific Temper. Scientific Temper has to be an inherent quality in minds of our people, particularly the educated and it has to be a societal responsibility also. This quality is somehow missing in the modern educated Indians.

### **DEVELOPING A SCIENTIFIC TEMPER**

In our country, where a large section of the society is still caught in the confusion of superstitions and conservative practices, inculcating scientific temper among the citizens is of supreme importance for development of the nation. This is best done during the childhood while the child is learning how to respond to the urges of everyday life. It is therefore essential that the school curriculum should respond adequately to this important need. This demands inculcation of values like spirit of inquiry, courage (to question), objectivity, honesty and truthfulness, which help in the development of various traits characterizing scientific temper. Very often the spirit of inquiry, so natural in most children actually gets suppressed by the drab teaching-learning environment. It is therefore of paramount importance that education process be made joyful, with the teachers acting as facilitators of learning, as friends and guides. The child must be free to learn, what he chooses to, at the pace that he relishes, and must be free to make mistakes without the fear of being scolded by the teacher.

An effective method of fostering scientific temper is imparting knowledge of science through experimentation and demonstration, by involving students directly in activities similar to how scientists operate in discovering new knowledge. This is usually referred to as the discovery approach to teaching and is eminently suited to teaching science. Clearly teaching of science in this manner would greatly develop scientific temper among the students for, as goes the Chinese proverb :

*I hear, and I forget;*

*I see, and I remember;*

*I do, and I understand.*

The attributes of scientific temper like, honesty, truthfulness, humility, perseverance, positive approach to failure, are essentially some of universal human values which are as

important for happiness of an individual as also the society. Inculcation of these and other universal human values should become an integral part of the education process.

## **ESSENTIAL REQUIREMENTS OF SCIENTIFIC TEMPER**

The mental attitude which is behind the method of acquiring reliable and practical knowledge may be called the “Scientific Temper”. Scientific Temper involves the application of logic and the avoidance of bias and preconceived notions. Essential requirement of Scientific Temper is the attitude of not accepting answers without scrutiny. We will find that the tendency is very common to accept views and opinions simply, because traditionally we have accepted these views or some very important persons or say some books which are highly esteemed like our religious books have expressed the views. But, the scientific method requires solid information and incontrovertible data, and then suitable analysis before accepting anything.

We should only accept the conclusions which are derived from sound application of reason, even though they may go against our favourite ideas or ideas widely held by people. In other words, one should not be inhibited, or should not shy away, from accepting ideas based on only on reason. *Openness of mind and absence of dogmatism are the hall marks of the Scientific Temper.*

**Thus, in brief, Scientific Temper is:**

- The mental attitude which is behind the method of acquiring **reliable and practical knowledge**.
- **Not accepting answers without testing and trial.**
- Requiring solid information and incontrovertible data, and then suitable analysis before accepting anything.
- **Not accepting views and opinions**, simply because traditionally they have accepted these views.
- Not observing obscurantist and superstitious practices.
- Openness of mind and absence of dogmatism.

## **POSITIVE ATTITUDE**

A positive attitude is a philosophy of approaching life with optimism and confidence. Spirituality and scientific temper are also a reflection of positive attitude. Developing a positive attitude means

1. Looking adversity in the eye... and laughing.
2. Getting what you get, and not pitching a fit.
3. Enjoying the unexpected, even when it's not what you wanted originally.
4. Motivating those around you with a positive word.
5. Using the power of a smile to reverse the tone of a situation.
6. Being friendly to those you don't know.
7. It's getting back up when you fall down. (No matter how many times you fall down.)
8. Being a source of energy that lifts those around you.
9. Understanding that relationships are more important than material things.
10. Being happy even when you have little.
11. Having a good time even when you are losing.
12. Being happy for someone else's success.
13. Having a positive future vision, no matter how bad your current circumstances.
14. Smiling.
15. Paying a compliment, even to a total stranger.
16. Tell someone you know that they did a great job. (And mean it.)
17. Making someone's day. (Not just a child's but adult's too like to have their day be special, too!)
18. It's not complaining no matter how unfair things appear to be. (It is a waste of time... instead do something!)
19. Not letting other people's negativity bring you down.
20. Giving more than you expect to get in return.
21. Being true to yourself... always.