

**Ethical And Environmental Thoughts of Prof N.S. Ramaswamy
(Two of his selected articles are reproduce below)**

Ethical and Moral Values for Engineers

We use the word “ethics” in a general sense, applicable to all individuals, Institutions, Corporations and Organizations involved in innumerable human endeavors. Ethics means right conduct, righteous path, Dharma, moral codes, standards and norms of society.

Ethical would mean :

- ♦ NOT TO steal, bluff, conspire, criticize, betray, hurt, say lies, manipulate, falsely accuse, etc.
- ♦ TO BE truthful, kind, supportive, helpful, sympathetic, fair, etc.

This include: a) A Company should not over-price, adulterate products, give false information, cheat customers, etc.; b) A Corporation or an organization should be ethical towards its employees by being fair and just. It should give respect and reward to meritorious employees; c) Citizens should be loyal to the country and be patriotic; d) Self-interest should not drive them to use unfair means to achieve goals. Ethics also suggests that means should be as important as ends.

Ethics is subjective to individual Institutions and Corporations. For instance, in IT Companies, employees are asked to work long hours, which affects their health and family life. Though it is unethical, it is considered essential for surviving in a competitive economy.

Prof. N.S. Ramaswamy*

In this paper, we are more concerned with personal ethics, such as honesty, integrity, truthfulness, etc. Unlike other professions, Engineering is involved in every area of human activity.

Spectacular developments in Science and Technology during the last two centuries has enabled man to make great progress in all areas of human endeavor - whether it be space travel, instant communication, eradication of diseases, or transplantation of human organs. What has been achieved during the last 100 years in material progress is far more than the previous 5 millennia.

Scholars have pointed out that with increasing mechanization and automation, man ought to work less and enjoy leisure more. On the other hand, to generate more income for the employers and the employees, workers particularly in the high tech. industry, are made to put in double the number of hours what their forefathers did in the 19th century for making a living. In such industries engineers have become adjunct to the machine. So much so, human needs are being denied. Families are breaking down under the stress and competition in meeting the targets laid down.

The world is progressing materially by application of Science and Technology at one

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end and Organization and Management at the other. Therefore, engineers ought to understand the role of Organization and Management. Engineering is neutral to values. It can be used for good or bad. It is the ethical dimension of Management that determines whether technological development should be utilized for the good of man or for his destruction, physically and mentally.

Management involves supervision, human relations, leadership, communication, decision making, problem solving, team spirit, cooperation, morale, motivation, incentives etc. Organizational principles consist of decentralization, delegation, man power, planning, career development, training, responsibility and authority, accountability, fairness, rules and regulations, procedures, systems, policies and promotions, rewards, punishments, job rotation and enrichment etc. Obviously, Management and Organizational principles go together.

Ethical and moral values are part of the Management component of all professions and activities, including Engineering. Engineers should observe ethical and moral values in their personal and professional lives as well as in relationship with the environment, such as government, religion, community, professional clubs, suppliers, consumers and public at large. The role of Engineering as a profession in relation to Nature and Animals is a macro view of Engineering as a profession. We also have to concentrate on as to how and why an Engineer should observe ethical and moral values in his personal capacity and in his relationship with everything, including his own soul, mind, family, company in which he is working, neighborhood and so on.

Animals are instinct driven and humans are value seeking. A Dog will wag its tail; a cow

will not eat meat. By continuous repetition of the habit or a behavior pattern, animals develop this instinct. However, a human being is endowed with the ability of discrimination. Therefore, we have a choice to adopt either the good path or succumb to the bad path. This is not in action alone but in thoughts and words. Thought is more powerful than words. And words are more powerful than action. Therefore, choosing the right path means keeping always good thoughts in the mind and speaking properly of what is proper and truthful.

Now we come to the concept of values. Values are those attributes which individuals, religions, community, organizations or groups consider important. Certain values are universal such as truth, honesty, integrity, etc. Some others are time and location specific, which will differ with culture, country, religion etc. What one considers universal may not be acceptable to others. In a sense values are subjective. Values change with time and circumstances. Ethics and Morals are part of Values. Ethics will differ from individual to individual and country to country.

Monogamy is an accepted custom in India and in most parts of the world. But Islam has permitted up to four wives, provided the husband can maintain them. Polyandry is accepted in some communities, while in most parts of the world it is not.

Personality is developed by good and positive values. Capacity, character and competence are to be inculcated in thought, words, actions, transactions and all relationships with our environment, which in turn, consist of innumerable entities, such as our own divine self, body, mind, intellect, family, organization, community, friends, animals, Nature's endowments, etc. By

continuous practice, these attributes become part of our habit. A habit repeated becomes part of nature.

As citizens, we should be loyal to our nation, patriotic and abide by the law of the land. China and Japan have shown the tremendous benefit arising out of loyalty to the nation. Spiritual leaders also inspire millions to work selflessly. Sathya Sai Baba has millions of devotees all over the world because of spiritual values he possesses. So too Mata Amritanandamayi. Incidentally, India has many such Sadhus, Sages and Saints, who have thousands, if not millions, of followers.

Gratitude and indebtedness are rated as vital values in Indian culture. We should all the time, be conscious of the many entities that we owe our identity to.

Though India is the most religious country in the world, we have been rated as the most corrupt. In some European countries, where

Church attendance is very meager, people are more honest. Some nations in West Asia have adopted severe punishment to curb unethical practices, such as cheating, adultery, etc, where limbs are cut off or culprits are stoned to death. In some other countries, like Singapore, Government is very strict in ensuring that the law of the land is not violated. They impose heavy fines on those who indulge in violation of rules and customs of their society.

In order to improve work culture, morale and motivation, a number of value systems have been tried out. Ethics is a very broad term to improve personal behavior, work culture, duty consciousness, inspiration drawn from selflessness, sacrifice etc.

In the case of Engineering, we have the example of Sir Visvesvaraya, an engineer - statesman who is even now highly respected by all segments of society. Very few others have been held in so much of high esteem.

Environment – Role of Nations, States & Citizens

Man-Animal-Nature

Based on meditation, intuition and super-human mental powers, India's ancient sages made bold speculations and theories concerning the age of the Universe, gravitation, planetary movements, etc. Modern scientific discoveries, using sophisticated equipments and computers, have confirmed that most of these observations and assessments were more or less correct. In the last 200 years, more damage has been done to Planet Earth than in the earlier millennia. Mankind recognized the danger of such uncontrolled growth 50 years ago. Since then, a great deal of studies have been done.

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Global concern

There is now serious global concern over the reckless over-exploitation of nature, excessive consumption of goods and services by affluent countries, abject poverty in low-income countries, enormous wastage of resources and human talent and depletion of non-renewable energy and resources.

Spectacular developments in science and technology in transport, communication, industry, mechanization and automation have brought about affluence for one billion in the