

ON DIFFERENT WAYS OF KNOWING

Rector's Introductory Remarks for the Symposium
on Science, Technology and Spiritual Values

25 May 1987

UNU Headquarters, Tokyo, Japan

Reverend Niwano, Cardinal Poupard, Professor Tsuchida,
Reverend Yamada, distinguished speakers and guests.

I would like to welcome you all on behalf of the United Nations University to this joint symposium on "Science, Technology and Spiritual Values: An Asian Approach to Modernization." I have found the title of this symposium to be a very provocative one, and I am sure that it will stimulate all of us to deepen our reflections on the relationships among the elements that are presented for our consideration. I, for one, would like to plunge directly into a discussion of some of the challenges raised by the juxtaposition of the terms "science," "technology," and "spiritual values" in this way.

I have had some difficulty in coming to grips with the term "spiritual values." Do we mean by this religious values, moral values, ethics? None of these three is precisely synonymous with spiritual values, though they overlap considerably. Religion, for example, is the major source of spiritual values for most people -- but even irreligious people may hold spiritual values. I dislike the resort to negative definitions, but the simplest way of saying what I mean by spiritual values is non-material values; values which are held without reference to worldly or bodily objectives.

The title of this symposium appears to accept an implicit contradiction -- even an opposition -- between science and technology on the one hand and spiritual values on the other hand. I would like to make clear from the outset that this is an opposition which I reject and even find dangerous.

The highest spiritual value in my view is truth. A vision of the truth is central to all religions that I know of; indeed, it is religions' claim to an understanding of the ultimate nature of truth that gives them their legitimacy.

Seen in this light, is science value-free? Quite the contrary. The ultimate scientific value is also truth, though

the aspirations of science are more limited than that of religion. Science seeks the truth about the physical universe. At its best, science has the humility to leave the question of the meaning of the universe to other realms - religions, for example. At its worst, science has the arrogance to deny that there is meaning to the universe or that truth is more than the constructs of verifiable facts.

Hans Morganthau wrote that "the constituent principle of science is the search for and profession of truth." He went on, however, to inveigh against the corruption in the scientific community of this central value and guiding principle of science. The crisis of meaning which he saw in science stemmed from the perversion of science's commitment to the truth. Science at the service of government, and he might have added of commerce as well, is often used to obscure the distinction between truth and falsehood. It is virtually always used in the pursuit of material as opposed to spiritual values -- whether for domination, as in weapons research; physical health, as in medical research; or commercial profit, as in product research. Some governments, however, do support "pure" scientific research for which no immediate application is in prospect.

The modern scientific enterprise is almost wholly dependent on government and industry. The budgets and priorities for scientific research are set by those who control the purse-strings. The great predominance of military research and development is one result. It is roughly estimated that military pursuits engage between one-quarter and one-third of all scientists and technologists in the world. But even when scientific research is not directed toward improving the instruments of destruction it is more often guided by principles of economic profit-maximization rather than by the maximization of human dignity and the quality of life. The creative impulse may belong to the individual scientist, who may indeed hold truth as the highest value. But the infrastructure and financial support that makes the scientist's work possible is a social construct, and reflects the values of the decision-making collective.

Technology is the opposite of spiritual values, but is not necessarily in opposition to them. Let me explain this apparent paradox. The purpose of technology is to achieve material results. Technology is irrevocably non-spiritual. However, the material objective that is sought through the application of technology may be wholly consistent with spiritual values. Indeed, it may proceed directly from them. Love for our fellow creatures is a spiritual value, and we seek to invent new devices, new methods, and new applications of knowledge that will relieve

their suffering from hunger, disease or violation. Technological objectives may also be in stark opposition to spiritual values, as we have so often seen in the technology of war and exploitation.

The argument that I am presenting here is an argument against technological determinism, and also an argument against a kind of dualism, that sees the material values of technology as necessarily opposed to spiritual values. This may seem so obvious that it does not need stating. Yet we see in many groups of people a rejection of technology as such, in reaction to the very real damage that our technological tools have allowed us to do to each other and to our environment, in violation of spiritual values. During the violent convulsions in Cambodia not too long ago, even to wear glasses was sufficient reason to be regarded as an associate of the modern technology of war that had laid waste to the country. All technology was rejected; cities virtually abandoned, agriculture returned to primitivism in a chosen policy under which millions suffered and died. The rejection of technology was made to serve values as much in opposition to the spiritual values of the Cambodian people as was the horrific application of technology in the preceding war. So let us be very careful before we reject or embrace technology as an abstraction. The consequences of technology are the consequences of human choices and actions; the machines do not -- not yet at least -- programme and run themselves.

One of the mainstays of religion is some form of a doctrine of consequences. Whether in this life, the next life or the afterlife, most religions teach that human beings are responsible for their actions and must bear the consequences -- though most religions also offer the possibilities of grace, enlightenment, redemption or forgiveness -- though even these are consequences of actions such as confession, penitence, faith, devotion, petition or good deeds. To place the blame for the ills of society on technology is in a peculiar sense to absolve the human being of responsibility for the consequences of actions that are always set in motion by human beings.

The American protestant theologian Roger Lincoln Shinn has written, "The big issues cannot be left to technologists who are ethically illiterate or to moralists who are technically ignorant." I suspect that ethics and technical knowledge often reside in the same person, but are rarely given scope for simultaneous exercise. The values of the scientist or technician may influence his or her work, but it is the operative values of society that determine the scope for different kinds of scientific work: the degree of support they are given, the enthusiasm for their application and the restrictions placed on

their distribution. In other words, the values that science and technology are made to serve is very much a matter of social choice.

I have touched upon three of the four elements in the title of this symposium -- namely science, technology and spiritual values. I have not yet referred to Asia, to the specificity of the Asian context in these three dimensions. I believe that other speakers later in the programme will talk about the scientific traditions of Asia and their interactions with the western tradition that has become the dominant scientific and technological culture in the modern world. Knowing how dangerous it is to generalize, I would like to make just a few tentative remarks about the spiritual values of West and East and how they might affect the broad direction of the scientific enterprise and its technological expression.

In a celebrated essay written in 1966, historian Lynn White Jr. argued that the ecological destructiveness of modern science and technology could be traced to the relationship between man and nature posited in European Christianity. He wrote, "Especially in its Western form, Christianity is the most anthropocentric religion the world has seen ... By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects." From a world in which animals, plants and places were seen to be inhabited by divine spirits, Western Christianity moulded one in which spirituality was appropriated and vested in God, who made man in his image and gave him dominion over the earth.

In Islam, the concept of the human person as God's vicegerent on earth denotes that people have an obligation to care for nature even as they use it. This also gradually evolved in Western Christianity. Stewardship is a somewhat anthropocentric notion, though it is a step up from dominion. The religions of Asia -- particularly Buddhism, Hinduism, Shinto, and some of the Sufi traditions within Islam -- have a world-view in which the natural world is much more of a continuum, with the human a part of nature rather than a privileged being standing outside of nature. There is here at least the rootstock for a sense of obligation to the rest of creation which could do much to moderate the more brutally destructive interface of modern technology with nature. The very idea of reincarnation expresses a sense of solidarity with other creatures, just as the idea of an endless cycle of rebirth expands the temporal horizon of the individual. Having said this, these particular spiritual values have not prevailed over short-term, materialistic values to protect the integrity of the Asian environment.

Commitment to freedom of inquiry depends on an ethical -- almost a religious -- judgement that knowledge is good and ignorance an ill if not an evil. Islam enjoins people to seek knowledge wherever they can find it. The history of Islam however has also shown the constantly shifting tension between this injunction and piety. There is also ambivalence about knowledge in Christianity. Adam fell from grace by eating the fruit of the tree of knowledge. Knowledge and innocence are opposed in the myth of the Garden of Eden, where the acquisition of knowledge cast humanity out into the world of toil and sorrow. In Buddhism, by contrast, ignorance and illusion are the root of all suffering. Here is a world view consistent with the highest values of science and technology: to push back ignorance and use knowledge to relieve suffering. The unquenchable human thirst for knowledge in the face of the mysteries of the universe was identified by Aristotle as the basic motive force of science. In the mystical traditions of Asian religions (which have remained much stronger than the mystical traditions of the West) we find another response -- a striving to transcend the limits of empirical observation and achieve a direct encounter with truth. In this, there is a recognition of, or perhaps simply a greater ease with, the limits of what we can know -- an acceptance of mysteries that are beyond human understanding. There is for some Asian civilizations some danger in treating this path toward truth as an alternative or substitute for scientific inquiry, when the two are in reality parallel and complementary paths.

The recognition and acceptance of limits to human understanding and power is a quality that has emerged with increasing clarity in recent decades as a key to human survival. Edward Teller, one of the fathers of the atomic bomb, said in speaking of that development, "We would be unfaithful to the tradition of Western civilization if we were to shy away from exploring the limits of human achievement." We may be grateful that this view is not part of the tradition of Asian civilization. In both West and East, there is an alternative view gaining ground that operates on the basis of a certain humility in the face of creation. It accords spiritual values at least an equal place with material values. It recognizes that there are limits to our understanding rather than denying the importance -- or even the existence -- of that which we cannot grasp. It acknowledges that even if there are no limits to what we can do, there are limits to what we should do. One of the advocates of this alternative world view is a German philanthropist and member of the European Parliament named Jakob von Uexkull. He described one of the needs of our time as the need "to help the West find a wisdom to match its science and the Third World a science to match its ancient wisdom." Surely that is a call for co-operation between the two, in the interest of all human kind.