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Science in Christian Perspective

The Church Education and Third World Development

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 \mathbf{T} he Third World is the world of underdeveloped and developing nations. As one insightful African

noted the preferred term once was "underdeveloped" but now the more positive "developing" is used (Yoloye, 1980, p.vii). Both of these terms were originally used by Westerners to describe how far up the technological/industrial ladder non-Western nations have climbed. One might argue about the appropriateness of judging other cultures by one's own standard. In doing so one assumes at least tacitly if not overtly that his own culture is the superior one. At best this leads to paternalism towards the people of the culture in question. Consider the remarks of Lord Lugard former Governor-General of colonial Nigeria (1965, p.70),

"In brief, the virtues and the defects of this race-type are those of attractive children, whose confidence when once it has been won is given ungrudgingly as to an older and wiser superior, without question and without envy. Valiant, clever, and lovable, they bear no malice and nurse no grievance. "

Although many years have passed since Lugard left Nigeria his sentiments still remain. It is not uncommon for Westerners working in Africa today to feel that their hosts are like children playing at an adult's game. This is hardly the stuff of communication and understanding among people. Nevertheless with respect to development the Third World nations have generally accepted the Western technological standard and indeed cast acquisitive glances at the West's technological cornucopia.

There are many ways in which the Third World nations pursue development, not the least of which is to

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buy it when the money is available. Nations with petrodollar wealth like Saudi Arabia or Nigeria are good examples. But wealth is not the quickest, most accepted key to and quarantee of development. Education is. For Nigeria,

"The philosophy is that education is recognised as the greatest force that can be used to foster the much needed unity of Nigeria and to correct the imbalance in inter-State and intra-State development. Education is also the greatest investment that can make for the quick development of the economic, political, sociological and human resources of the country. The Government therefore will provide equal educational opportunities for all the citizens." (Taiwo, 1980, p. 188).

Not all areas of education are treated or valued equally. There is little emphasis on liberal arts education although the African arts for instance are indeed very rich (e.g. see Larson, 1980, pp.81-92 and Hughes, 1982, pp. 50-1). This is partially a reaction to colonial education which nationalists judged to be of too little practical value and in response to a very pressing development need. Professor Baikie, Vice-Chancellor of the University of Benin states (1981).

"[Africa] must also be ready to develop the necessary managerial, technical, and scientific talent to be used for development. Technology ... and Science ... are necessary preconditions for development. Africa is very far behind in developing its technology and Science."

The growth and use of technology has no foreseeable limit (i.e. other than Armageddon), so there is an imperative that there be an equal and parallel growth in the numbers of scientifically literate laymen (Zoller and Watson, 1974, p.108). The theme then of the Third World is, "education for development." More specifically it is, "science education for technological development."

An emphasis on science education is one thing. Very often there is an over and unqualified emphasis, born of impatience, placed on a science education deemed necessary for technological development over a seemingly less useful but culturally acceptable liberal arts oriented education. In Nigeria the national policy is governed by this point of view. Professor Fafunwa, Nigeria's preeminent educator, has written (1977, p.70),

"The teaching of physics, chemistry and biology, or a composite of them, called general science' should be a compulsory subject or subjects for all secondary school pupils, just as language and literature are today. In the world today, science and technology, we repeat, have become a dominant cultural factor and any nation that is not alive to this fact is either dead or dying."

One would hope that there would be theologians, artists and other humanitarians willing to contest science and technology's ascendance to the position of "dominant cultural factor."

What are the results of such policies? First one must consider what these nations are like that are struggling to develop. Many African nations are only about twenty years old, having gained their modern independence in the late fifties and early sixties. They are rural, agrarian societies in the main; the typical African farmer works with a hoe. The plough is a Middle Ages technological improvement that never

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reached sub-Saharan Africa. Neither did the wheel. While camels and donkeys are used to move farm products, seldomly does one see a cart employed. The English sociologist J. Goody has observed that (1980, p.75),

"In Africa the small scale technology of [Middle Ages] Eurasia is lacking; at the village level ... there were woodcarvers but few carpenters, iron-workers but no mechanics, potters but no wheels or kilns. The basic craftsmen have often to be trained."

Julius Nyerere of Tanzania says of his own people, "We are not ready for the tractor, either financially or technically; but we are ready for the oxen-plough..." (1967, p.4). It is into these societies that is being transplanted the science, technology, and education of the 20th century West.

It has been said that whether developing nations take the capitalist or socialist economic path they need as well to develop a corresponding capitalistic or socialistic culture as support (Baikie, 198 1). The same can be said with respect to science and technology. If this is to be a component of development then there also needs to be a concurrent development of a cultural foundation that minimizes the disruptive side-effects of technological development. One could argue that in Western civilization the deepest roots of science and technology are as old as that civilization. Hooykaas (1972) and Klaaren (1977) have written convincingly of the Judeo-Christian roots of modern science and technology. The meaning is that for generation after generation science has had an influence on Western peoples. Over the decades, especially over the last 20 years, that influence has grown and now the societies of those peoples are said to be industrialized and technoligical (this is not to admit that this progress has become the dominant cultural factor). The benefits of such societies are obvious to the people. if the problems are less obvious then there are prophets from Jacques Ellul to Ralph Nader to warn them.

The point is that Westerners today because of their culture have grown up to be a technologically oriented people. Their culture accommodates and therefore minimizes the disruptive effects of science and technology. On the other hand, in the developing world one is disturbed to see that to date most development continues to be balanced precariously atop a non-technological cultural foundation. Seldom is time allowed for true and necessary integration. The policies of development often hasten an unfortunate revolution rather than an evolution to transform societies from the 18th century to the 20th century, and the resulting cultural and sociological disruption is no surprise.

These educational policies are not without success. Scientific communities have been established and are being sustained by young scientists coming up through the school systems (e.g. Chitnes, 1980). Colonial founded universities such as Nairobi and Ibadan have made progress towards indigenization. They have developed truly African features (Eisemen, 1979, p.80). The people involved in these communities of course are only a small percentage of their nation's populace. Furthermore it is an elite percentage that often has become quite removed from the cultural mainstream of its nation. That a professor at a university has learned to accommodate educational and technological progress is no indication that his rural countrymen have. It is often the case that this elite, having tasted the heady wine of development, pushes even harder for more and faster development. They become a source of disruption rather than a catalyst for cultural integration.

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Untempered policies for, the promotion of science, technology, and education can also result in an unfounded hope amongst people; that is, the hope that the cures for all the ills of the human condition are coming within reach. Problems with known solutions are taken care of through popular education. Science provides the needed knowledge for the yet unsolved problems and technology applies that new knowledge. Certainly the hope for a better life via development is reasonable and justified. To be literate is unarguably better than to be illiterate. There are however many problems that education does not solve. Mass education has not emptied American prisons as the educator Horace Mann once predicted it would. There are also many problems that have proved to be intractable to date to the efforts of science. Furthermore and of more immediate importance, technological solutions are not without adverse effects. Nature has a grim way of extracting her ounce of flesh for encroachment against her (e.g. the ecological disasters of the West). One admits to the difficulty and political unpopularity of warning people who live in a parched and and land that there are adverse consequences of large scale water control and irrigation schemes. When one's people are illiterate, modern mass education does seem a flawless necessity. Environmentalism and conservationism do seem like luxuries for the wealthy. Nevertheless quick, short-term solutions are often the seeds of long-term difficulties.

The developing nations are helped by more advanced nations who give aid and assistance and who do business with them. Parts of Africa have taken on a cosmopolitan hue because of the many expatriate advisors, teachers, technicians, and businessmen present. These Westerners (including those who have been westernized) are often unwitting compounders of Third World problems. Because of their technological background the tendency is to define their own problems technologically and to apply technological solutions. Westerners looking at the developing world do the same with frequent unfortunate consequences. To the experts, for instance, population is a problem called "over-population" (Ehrlich, 1968) and hence projects like the Kharma Study (Wyon and Gordon, 1971) in India funded by the Indian government and the Rockefeller Foundation. The failure of that project to curb population growth has been elucidated by Mahmood Mamdani (1972) who cogently argues that population is a problem to the western experts (and westernized Indians) but not to the Punjabi subjects of the Kharma study. To them large families are not only desirable but necessary for survival. There is quite a difference between perceived needs and felt needs. Outsiders perceived a need to slow down population growth that they saw as damaging to the Punjabis' economic condition. The Punjabis feel a need to survive and to improve their economic lot. Children, especially sons, insure that the need is met. It may well be that the real problem is or eventually will be over-population, but the approach and subsequent dismal failure of the Kharma Study has made the issues more difficult than ever to deal with.

Westerners furthermore tend to believe that both their science and their technology are acultural and fit in equally well almost anywhere. Scientists and laymen have of late grappled with the moral and ethical dimensions of science, rejecting notions of moral neutrality. Cultural issues need as well to be dealt with, for there seems to be little cultural self-awareness and even less awareness of cross-cultural comparisons. The case of Iran is an instructive one. The late Shah with American encouragement accepted a position of cultural neutralism with respect to many aspects of development. The Iranian islamic fundamentalists did not. The Ayatollah and his followers are men of the Islamic cultural zenith, the medieval period of 700 AD to 1100 AD. Of this period Von Grunebauni (1946) has written,

"But while Islam for many a century continued liberal in accepting information, techniques, objects, and customs from all quarters, it was careful to eliminate or neutralise any element endangering its religious foundation, and it endeavoured consistently to obscure the foreign character of important borrowings and to reject what could not be thus adjusted to its style of thinking and feeling" (p.32).

One might conclude then that the fast pace of development under the Shah did not allow for the syncretization that would "obscure the foreign character of important borrowings." Resistance to change and out-right rejection occurred, which, coupled with the many other failings of the Pavlavi regime, resulted in revolution. A person is left wondering if the same fate does not await leaders of other nations undergoing rapid developmental change.

None of the foregoing is staging for a chastising-the-West conclusion. Western nations are already subjected to quite a bit of that sort of thing in spite of the fact that the chastising "have-nots" aspire themselves to be "haves." America is often singled out as the chief example of a technological, industrialized society and so it should be. The genuine richness of American life is not illusory. The alleviation of poverty and sickness coupled with civil liberty is an achievement worthy of imitation. While one would hope that America will be a partner in development with other nations, as President Reagan expressed at Cancun (Stesser, et. al. 1981 pp. 30-6), it must be remembered that the United States has many problems of its own not curable by it's well established education, science, and technology triumvirate. There are problems that are very much the consequences of the nation's progress in development (e.g., in medicine new ethical problems have arisen with the rise of various life-sustaining machines). People of the West and especially Christians are aware that these things are so. That awareness needs to be shared with the developing world. A partnership in development then does not mean the uncritical transfer of Western ideas and machines from big brother to little brother.

The Christian contribution to development has already been significant. As happens at home the Gospel accepted brings an increase in morality and integrity. In those lands said to be underdeveloped according to the technological scale much more happens, Gospel accepted or not. The preaching of the Gospel is the priority of Christian missions, but the centrality of the Scriptures in Christian faith and the love of God lead missionaries into two additional tasks. Missions develop schools so that people can learn to read the Scriptures and they do various sorts of relief work to combat hu man suffering. Historically these efforts have had a direct influence on development. They have had far reaching albeit unintentional consequences. Speaking about Nigeria, Ozigi and Ocho (1981, p.37) say,

"One of the greatest legacies of the missions was their educational work. Though the major objectives of the missions in establishing their schools were the expansion of their religious activities and the spiritual edification of their adherents, education produced partly unintended results. The struggle for Nigerian independence was waged by people literate in Western education".

The Zambian leader Kenneth Kaunda was the son of the first African missionary of the Livingstonia Mission of Nyasaland. Kaunda says of himself (1962, p.146),

"...I was brought up in a Christian home and my Christian belief is part of me now. It is still my habit to

turn to God in prayer asking for His guidance. I do not think I have ever seriously doubted the truth of the Gospel..."

Dr. Nnamdi Azikiwe is another case in point. He received his education in mission schools and claims that the precepts of Christianity have guided him in his public life. Today he is known as the father of modern Nigerian nationalism, the chief architect of Nigeria's independence (Ojiako, 1980). In sum, the early missionaries came and "...planted churches, opened hospitals, and established schools, thereby setting Africa on the path to modernization" (Kane, 1981, p.62). What is seen today in nations like Nigeria is the partial responsibility of the Church.

The times have changed however, since the early mission days. The Church no longer has the direct influence on development it once had through the mission schools and hospitals. Schools and hospitals are now largely run by national governments. There has been a change in emphasis as well. The missionaries were interested in the evangelization of people, not so much in development. Things like educations were thus a method to an end. The national development plans of today embody education, science, and technology but without the gospel. Herein are two reasons for the continued involvement of Christians in the process of development. First, the work of the Church started the process of development, however unintentionally, and therefore should not now abandon it. Second, the missionaries had the right idea about education, science, and technology all along. They are things to help people but are not the most essential.

Christians are called to be salt and light in the world. As such one would like to see African Christians, expatriate Christians, and missionaries, especially all those who are teachers, exert a moderating influence on development and growth. The Evangelical Church of West Africa (ECWA) can be sited as an exemplary church in action. ECWA operates a rural development programme for farmers under which agents are sent to visit villages bringing agricultural information immediately useful to the village farmers. In Nigeria this is quite the opposite of the government's Green Revolution programme which is aimed at large scale, mechanized farming. ECWA also supports the concept of relevant technology. A recent article in the ECWA publication "Today's Challenge" (1981, p. 16) begins,

"In a society where things are not made with the need and yearnings of the people in mind, the name 'Relevant Technology' no doubt rings a bell. This all the more so because all countries, especially those of the Third World, require and should work towards the production of materials, goods and equipment that not only satisfy but are also relevant to the needs of the people. This should be the goal of our engineers and industrialists, But rather unfortunately, it has not been!"

The article goes on to describe the work of the Institute of Relevant Technology in Plateau State, Nigeria, which trains people to become employable or self-employed in businesses making locally needed products. These products include such things as tricycles for the lame and cassava grinding machines affordable by villagers. This work of ECWA might be called development from the ground up, which can serve as a balance to the often top-down development schemes of government. The work is slow-growth work which brings about the more gradual cultural change that minimizes social disruptions while maximizing technological effectiveness.

In their role as salt and light there is one more job for Christians. This is the job of influencing the attitude people and government take towards education, science, and technology. The early missionaries were right in thinking that these material things can be helpful but are certainly not a panacea for all problems. An unqualified emphasis on them results in a form of idolatry. Idolatry always fails the believer, whether an individual or a nation. As nations struggle to develop, the Church's role in development has become that of prophet.