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# PHILOSOPHICAL REFLECTION ON ETHNICITY, SCIENCE AND TECHNOLOGICAL EDUCATION

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By

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## Abstract

*Ethnicity is a social phenomenon associated with interactions among members of different ethnic groups. Science can be used to control nature and to create the kind of culture that surpasses all restrictions of time and space and obeys the hands of man. Today man is caught in the clutches of infinite, committing himself to the limitless possibilities of science, particularly after the age of enlightenment. Thus, man finds himself in a pluralistic society that is a society which is harmonious and enriching co-existence with a political community of people of divergent views, establishing and promoting their common good. In this light, the paper will examine the concept of ethnicity, science and technological education and in a sense its distinctive morality.*

There is an interaction between ethnicity and science. In the long run, philosophical reflection on ethnicity will result in an analysis and normative assessment of the societal consequences of scientific development. It will also lead us to examine the influence of ethnicity on other scientific sectors. By creating a pluralistic morality, ethnicity forms the basis for other sectors and will contribute to their disclosure instead of their construction. Construction takes place when both ethnicity and scientific method are absolutized instead of serving to disclose various cultural sectors. The meaning of pluralistic morality however is that it serves as a basis for the unfolding and realization of individual and communal responsibilities, in areas such as family nurture, education, housing, health services, labour conditions, politics, economics etc.

The purpose of this paper is to have a philosophical reflection on ethnicity, science and technological education or the interaction between them, and to examine their moral implication on the society. The purpose of this paper will be pursued in three stages. We shall examine the nature or philosophical reflection on ethnicity and science or interaction between them and their characteristic ways of arriving at truth, before they were exposed to the influence of a pluralistic society. Finally, a consideration (distinctive morality of a pluralistic society) of the moral implications of the influence of ethnicity and science in contemporary society will be made.

Before proceeding, it is necessary to define these two concepts; ethnicity, science and technological education. Ethnicity is defined by scholars from different perspective from which they look at the word. However, for the purpose of this paper, we shall adopt Nnoli (1978) definition that ethnicity is a social phenomenon associated with interactions among members of different ethnic groups. For the purpose of this paper we shall adopt the definition of science provided by an eminent Australian astronomer, Hanbury Brown in Shinned, R.I. (1980). He defines “science as the search for objective, verifiable truth. Science and technological education is an area of study in education that added bit-by-bit or the small step-by-step programmed learning approach during the mid 1960s, for successful solving of educational problems, particularly teaching and learning activities. In the process of learning, each part of the content to be learnt was systematically analyzed, it means it was carefully planned one after another or step-by-step in orderly manner, and it was followed up checked, rewarded and encouraged.

### **What is Science and Technology Education**

Here according to Derek, R. (1974), science and technology is known as the systematic analysis of educational problems which results in the identification of objectives, designing of resources and methods and the integration and evaluation of these for the achievement of better results. Ingle in Federal Ministry of Education Special Teacher Upgrading Programme (STUP), NCE course book on education Year I, 2007; saw educational technology as an integrated and systematic way of designing, planning, implementing and evaluating the total process of teaching and learning in terms of specific objectives, research and information on human learning and the process of communication. While in the same vein the British National Council for Education Technology finally asserts that educational technology is the process of applying available knowledge in a systematic way to problems in education and training.

### **The Purpose and Component of Re-engineering Ethnicity and Science or Technology Education**

The main purpose of science and technology education is the achievement of educational aims set by leaders in educational matters as well as by society itself. To achieve their goals the educational aims, curriculum content, resources (i.e. personnel, finances) for learning and the evaluation and modification of the learning process are harmonized with a view of improving for the better. Thus, science and technology education is concerned with the whole process of gaining knowledge. Here it includes the learner, the curriculum content, the teacher, methods, resource materials and other educating agents.

### **Science and Public Policy and Scientific Development**

It is clear that science is a body of knowledge, a way of method, and a way of thinking in the pursuit of an understanding of nature. Here we are interested with the relationship between science and ethnicity. In every government, there is the ruling

class and the ruled. While the ruling class usually comes up with major decisions in the form of public geared towards development of its society. In this vein we shall consider public policy in relation to scientific development with special reference to Nigeria.

### **Science and Politics**

Science as a system of organised enquiry into the natural and its applied form that is technology form the foundation of wealth and development and the basis of dividing nations as developed or underdeveloped. A nation is classified to be scientifically and technologically developed if it is able to produce manpower that can efficiently and successfully apply the capabilities of science in its pure and applied forms to the development of its people and the quality of her citizens.

Thus, it is the level of scientific and technological development that has rated the nation of the world into the first, second and third worlds. Nigeria, like most nations in Africa belongs to the Third World. For two extremes, we have the world classified into two, that is the developed or rich nations and the underdeveloped or poor nations. Here we have the developed nations ruling underdeveloped nations because of economic superiority, this is the interaction of politics. In this vein politics has been defined in Federal Ministry of Education, Special Teacher Upgrading Programme (STUP) NCE Course Book on General Studies Education year 2, 2007 “as the ruling of men and the ruling of nations”. It goes further to say that developed nations have succeeded in virtually ruling the underdeveloped ones. That is to say that they have become self-reliant, but this does not imply self-sufficiency. It only calls for absence of dependence but not absence of inter-dependence. This is to prove that no nation is completely self-dependent. Thus, underdeveloped nations have greatly ignored development of their traditional methods and locally available resource that is, indigenous technology for the development of their society.

### **Public Policy and Scientific Development**

It is certain that in every government, there is the ruling class and the ruled. This means, the government in power, usually take major decisions in the form of public pronouncements, that are aimed at improving national development are known as public policy.

For instance, in Nigeria this is reflected in two major policy documents which are: The National Policy on Education (1981) Revised; and The National Policy on Science and Technology (1986).

Here the National Policy on Education emphasises the teaching of science, technology and mathematics at all levels of education. In the same vein, the National Policy on Science and Technology (1986) emphasise science at all levels, to re-orient the whole society to be scientific in thought in order to develop new technologies, to encourage technological transfer to improve societal well-being and security.

In this vein the federal government has directed that university education into science and liberal arts disciplines should be in the ratio of 60 to 40%. She has even gone further to establish universities of technology.

Apart from the importance of objectivity and verifiability in science, Hanbury Brown goes further to say that the value of science is not only in its understanding of the world, 'for its own sake' but also in its impact on human progress.

### **Interaction between Ethnicity and Science**

Ethnicity is not tribalism, is the concept associated with this common phenomenon outside Africa. Thus, ethnicity is a more universal concept for understanding the phenomenon which colonial racism called tribalism. It is not limited in space, this force is to act as an objectively determined.

According to Nnoli, O. ethnicity has features which include hypothetical ones, it offers greater capacity for making out the path by which analysis may move most freely in logical space. It can provide more empirical references for any theory of which it is a part. Data indicated by it are not amenable to verification and falsification than those indicated by the concept of tribalism. Similarly, the concept "ethnic group" has a greater explanatory power than the concept tribe. Thus, ethnicity is a social phenomenon associated with interactions among members of different ethnic groups. While ethnic groups are social formations distinguished by the communal character of their boundaries. The relevant communal factor may be language, culture or both. As a social formation, ethnic groups are not necessarily homogeneous entities even linguistically and culturally. Minor linguistic and cultural differences often exist within the group, forming the basis for the delineation of sub-ethnic systems. More importantly is the possibility of occupational and call differentiation; and this depends on the level of production in the group, the level of group of the productive forces, and the consequent extent of the division of labour within the social formation. Thus, different ethnic groups may have a similar pattern of social differentiation.

Ethnocentrism is also associated with the interaction of ethnic groups. It is attitudinal inform and perceptual in context. Its attribute, are limited to belief, group identify parochio/orientation, and group pride. Ethnicity embraces these attributes but goes beyond them. It is behavioural in form and conflictual in content. First it exists only within a political society consisting of diverse ethnic groups. An ethnic group is in itself a polity, its relations with other societies and ethnic groups are characterized by naturationism. Ethnicity does not involve the demand for sovereign status or the use of the state apparatus on behalf of an ethnic group of the exclusion of others or the incorporation of an ethnic group into political society. Relations between ethnic groups within the same groups are political ethnicity.

Ethnicity is characterized by a common consciousness of being one in relation to the other relevant ethnic groups. This factor defines boundaries of the group that is relevant for understanding ethnicity at any historical point in time. Here the distinction

between the “ethnic group” in itself and the “ethnic group for itself” similar to that Marx made with respect to class. Thus, ethnic group refers to a group marked out but without a common consciousness or identify. Ethnic group for itself identifies a group with both linguistic and or cultural similarity and a common consciousness or identify. Conflict is an important aspect of ethnicity. This is inevitable under conditions of interethnic competition for valuable resources, particularly in societies where inequality is accepted as natural, and wealth is greatly esteemed.

In his view ethnicity is a complex phenomenon, it is not immutable. It alters its forms, its place, and its role in the life of society. New element differs in its context. Its link with other social phenomena change, posing such new questions. The failure of the perspective of “modernization” to explain ethnicity is admitted but its theoretical consequences are not accepted. The ethnic community is composed of material and spiritual cultures as well as social and everyday forms of communication that forms the history of definite peoples. Ethnicity is an inherent aspect of social change in all culturally heterogeneous societies. It performs the function of mystification and obscurantism. Consequently, it helps perpetuate imperialism, and militates against the imperative of revolutionary struggle by hampering the development of a high love of political consciousness by its victims.

He then says ethnicity impedes a serious effort to understand African societies because it ignores the ownership of the primary productive forces, the material basis of society and productive forces, the material basis of society and the nature of social system. It operates at the level of ideology, usually the historical circumstances under which an ideology emerges is important for its understanding. An ideology serves the interest of different classes in society differentially. Ethnicity would vary from an African country to another depending on the difference in their histories and class structure. Different African countries display different historical patterns and class structures depending on their ruling classes the courage, determination and leadership of the underprivileged, the degree of foreign influence the persuasion and power of domination ideology, social customs and tradition, culture, kinship system and form of government.

Science is the attempt to create a world that is moulded to human hand. According to Schurman in *Perspective on Technology and Culture (1995)*, when science and the scientific method are absolutized, we can refer to this method as one of destruction and reconstruction. Without taking into account the given order of reality, its structural diversity, and the mutual relationships within that reality, everything including their smallest components, is broken down or taken apart with strict consistency and then, using these elements, put back together again as we see fit. Converting the method of systems theory into an absolute, leads to the same result. This philosophic and scientific “creative” renovation of reality gives rise to a mechanized world picture.

He asserts that it certainly implies a view of science critical of the views widely held. First the nature of scientific theories needs to be recognized. The characteristic feature of these theories is not that they are objective or value-free. These theories have a basic religious foundation, although personal and social conditions may also play a role. For that reason, scientific theories should not function as if they were absolutely independent, nor should they be permitted to straight-jacket our knowledge and our action. A theory starts out from a hypothesis. A hypothesis which is an expression of human creativity containing man's faith-determined view of reality, aspires to the status of a scientific theory. Scientific theories are always conditioned and partial. They are also relative, for they relate to the knowledge of a particular aspect of reality, such as the physical aspect. Scientific knowledge is achieved by means of a method of analysis and abstraction based on a certain hypothesis. That is to say that scientific knowledge may be, it can also grow and even change by varying hypothesis, by a refinement of methods, and by increasing specialization, so there is no end to this process of acquiring scientific knowledge.

Thus, according to Imo, C.O. in *Religion, Science and Society* with particular reference to Nigeria in its *Bulletin of Religion*, science can be used to control nature and to create the kind of culture that surpasses all restrictions of time and space and obeys the hands of man. Today man is caught in clutches of infinite, committing himself to the limitless possibilities of science, particularly after the age of enlightenment. In effect man finds himself in a pluralistic society that is a society which is harmonious and enriching co-existence with a political community of people of divergent views, establishing and promoting their common good. Science has brought dramatic growth of international contracts, a growth with veritable social transformation across the globe. The rapid social changes now which has been brought about by the revolution of transport, communication, commerce, computer etc have in turn stimulated awareness of similarities and dissimilarities among peoples or ethnicity.

Today, with scientific advancement, science has made the world to become a global village, has created an awareness of pluralism and introduced new forms of pluralistic character. As science has led to such a transformation that has paved way for ethnicity in Africa, Nigeria or the world at large. In effect such a transformation that has taken place in Africa, Nigeria etc people of different beliefs, value, and customs find themselves involved together in social relationships. Under ethnicity these people who are different in various ways are faced with the problem of how to co-exist harmoniously. At times the smooth running of the society is disrupted by problem of pluralism. Like Nigeria is yet to overcome the social problems that have come as a result of the presence of science and ethnicity. This has led to the presence of plural religion that has paved way for distinctive morality of a pluralistic society and ethnic groups with characteristic features of a pluralistic society. But the more vexing problem is created by science and ethnicity, like in recent times, a good deal of energy has been used up in trying to create a formidable united Nigeria devoid of religious conflicts. In reality, this has taken the form of various projects, setting up panels and

making verbal appeals. In view of the nature of religious commitments or the pluralistic morality it cannot be predicted to what extent such efforts can yield successful results. But, one cannot but be optimistic that a high degree of success will be recorded despite their distinct morality that will open up themselves for meaningful dialogue.

One of the chief characteristic of contemporary society is its pluralistic character. But pluralism itself is not new, because at all times there have been differences between people, different beliefs and values, different political and social systems. The concept of pluralism itself and its implications in today's world are of more recent vintage. This is because today there is a dramatic growth in international contacts, a growth which has brought about veritable, social transformation across the globe. This has been given greater force by the scientific and industrial revolutions. The rapid social changes of today which have been brought about by the revolution of transport, communication, commerce etc have in turn stimulated awareness of similarities and dissimilarities among people. A new cultural world – a man made world, a technologically based world, a world of increasing variety, but a world that is becoming important in respects a more unified, constricted and congested world in-the-making.

However, Imo C.O. asserts that after the period of enlightenment and reasoning, aspects of social life started emerging as separate institutions. As such institution asserted its "independence", it no longer relied on another before its influence was felt in the society. The development of a pluralistic society implied that there was a shift from (religious monism to religious pluralism). The political leader could not exercise absolute power as before. The individuals of the society also had different goals and aspirations which they wanted to pursue distinct from those of the state.

He then says, it is this manner that people who are ethnically, politically and religiously different interacting together to make up a pluralistic society. There cannot be a pluralistic society without mutual encounter between individuals of different groupings that affect the thinking, attitudes, ways and interests of others. A pluralistic society can then be described as 'the harmonious and enriching co-existence within a political community of people of divergent views, establishing and promoting their common good'. The emergence of a pluralistic society inevitably brought about the problem of moral pluralism. For there can be no moral pluralism without pluralistic societies.

Thus, how can people who belong to different ethnic, cultural and religious groups be guided so that they can learn to work harmoniously together constructing the type of society that is ideal? The answer to this question will be attempted in this paper.

We shall examine the distinctive morality and give a conclusion.

### **Distinctive Morality of Pluralistic Society**

In this paper morality is regarded as the emergence within us of a distinct way of looking at life, relating to people, interpreting issues directing and evaluating sections. A human being is a person who is born to be a human being that is, to say a human being is by nature a being who realizes his or her natural potential within a frame of understandings and expectations that one discovers and which determine one as a human being. Such truths are neither imposed from outside nor dictated from above but are discovered from within.

According to Mason, D. "The Morality of the Pluralistic Society" (1989), the philosophy of human integration one of the profoundest truth about us is that human beings is first and foremost a unity and totality in virtue of which one absorbs and integrates into oneself many levels of being. A human being is not fixed in nature, but one who grows and matures through the process of an individual to be, one must be alive to the possibility of one's being by accepting and integrating them into the finality that one is human person. It is as human integrationists, we present our moral pluralism. Such a morality implies both a genuine self acceptance and an acceptance of others.

In a pluralistic society, this is the logical extension of the notion of morality that depicts the popular reference to right and wrong in terms of human group. The individual is part of a tribe, clan, sect, family, village and the like, this serves as the effect middle term between him or her and the world at large. The essence of the group is its distinction from outsiders. Morality consist primarily of right conduct towards the other members of the group. Moral pluralism, is a recognition of some of the deeper truths regarding mankind, both individually and collectively.

We can only discover the truth about ourselves and the good life if we are allowed to err in its pursuit and, within limits, pursues it as we perceive it. Moral pluralism recognizes another truth. Since no one is an island and all bear the stamp of incompleteness and dependently we can only pursue our individual and collective goals independency and in collaboration with each other. The distinctive demands of the pluralist society calls for an increased output of self reliance, respect, trust, patience, tact, benevolence and beneficence in ways which would not be called for in a more settled and unitary society.

Moral pluralism recognizes that there are common principles of human conduct, there are different criteria of justification and different sanctions attached there to. Thus, for example, Muslims, Christians and secular Humanists agree that, as a principle, human life ought to be respected. For whereas Muslims measure the value of human life by one's submission to the will of Allah, the Christian places such value on the christo-centric participation of all human life in Christ's own death and resurrection. A secular Humanist, while proclaiming the dignity of human life, will have nothing to do with supernatural trappings. And as regards sanctions, a Muslim might deal with a

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woman in adultery by stoning her, Christians, by excommunicating her while a secular Humanist might give her a medal. So moral pluralism recognizes identical grounds that human conduct can be base, but there is that possibility of having different criteria to justify them as well as the sanctions attached to them. While Muslims, Christians and humanists recognize the sacro-sanctionness of human life, all of them view it from different angle.

The different criteria and sanctions is not an endorsement of the difference, themselves as such. It is a recognition of another truth that lies at the heart of moral pluralism. The supremacy of conscience in submission to the truth as one perceives it. Conscience is indeed the primary and ultimate court of appeal, but only when it is in itself the servant, not the master of truth. The implications here are not only moral, they are also logical. Moral pluralism is more than application of one's general morality, it is also matter of logic. One of the implications is that whereas differences in some criteria and sanctions may be resolved because they are logically independent of the basic conceptual matrix from which they emerge others are dependent and therefore, could not be changed without changing the conceptual matrix itself in virtue of which they exist.

Thus one could argue that the recognition of the right of life, though basic to both Islam and Christianity can also be established on independent grounds of reason and therefore to the extent at least differences of interpretation of that right may be open to resolution by argument. But once one reaches a level of interpretation when the resolution of difference can only be achieved by rejecting the basic matrix of the respective belief system on which criteria and sanctions are based then the solution can not lie in forcing the elimination of such differences but applying the guide lines that moral pluralism provides in coping with ultimately irresolvable differences among adherents of different belief systems and rationalistic philosophies of life. There are several issues concerning the right to life that a Christian or a Muslim or a secular Humanist may differ on and then come to agreement. But when the differences are of such a kind that entail a rejection of the supernatural dimension to life than there is a parting of the way between believers and the secular Humanist. And if there were to be differences regarding the right to life that logically lead to the denial of divinity of Jesus Christ or a teaching from the Koran there would be a parting of the ways among believers themselves.

Here the philosophy of moral pluralism has significant in three-fold contribution to make.

Firstly, in its attitude to argument it proposes that all questions remain open until they are adequately resolved. It has an inherent confidence in the power of reason-conscience nurtured by truth-to move to different and sometimes higher viewpoints to call disputants subscribe without blurring the difference at the points of controversy. Moral pluralism believe in the hierarchy of truths where all truths are impotent because of the urgency relevancy or humanly based character.

Secondly, moral pluralism rather than run away from difference endorse them and values them highly. That is, it accepts differences in life in as far as they are able to build the human community.

Thirdly, moral pluralism as a function of the morality of human integration, has a distinct scale of values in its philosophy of social and political integration. That is, moral pluralism recognises the fact that human communities exist where the dignity of all members is respected above any other considerations.

According to the philosophy of human integration, human society is in the final analysis a community, not a collectivity. It is a spiritual communion of human beings in active solidarity with each other and therefore the dignity of no member can be jeopardized either in favour of others or for the state of any ideology however elevated. In this sense moral pluralism is clearly distinguished from utilitarianism.

The distinct contribution of moral rules is to ensure that the distinctly human dimension of all human behaviour is preserved, not that they are endorsed by reason, the model and measure of human actions, that they are binding and therefore lead to more desirable results, even if we may always appreciate them in that fashion. The role of morality in human life enables us, indeed compels us to make a distinction between approving the act itself and the results of the act – a distinction that is important in life.

### **Ethics in Traditional Nigerian Societies**

A careful look at the contemporary Nigerian society proves that it is morally bankrupt. In effect this bankruptcy has led to a frightening level of moral decay that has shaken the moral foundation of many traditional Nigeria societies. But ethnical norms are what assured the stability and proper functioning of traditional societies.

It is clear that the ethical foundations of our current society are the traditional attitudes and world-views that determined people's attitudes towards events around them, and the social norms that were evolved from these attitudes.

Thus, in traditional societies, the desires for peaceful coexistence and the evolution of an orderly society are the main driving factors behind the institution of social norms, particularly as it relate to good conduct in an orderly society.

In the same vein, the other issue is the maintenance of law and order, and the respect for human life, like cases of kidnappings, Boko Haram terrorists attach in Nigeria, arm-robbery etc. There is the fear of the superior supervisors of the cosmos, and possible metaphysical intervention and reprisal for misconduct.

In effect, no matter the level of competition in traditional society, there seems to have been an implantation in the minds of men of the desirability of proper human conduct. There was a dislike for improper behaviour, as this affected the way a man was rated in his society. Traditional society was in effect high respected and disciplined.

## Conclusion

I started with an introduction framework which explained how ethnicity and science led to the evolution of pluralistic society as well as the emergence of moral pluralism. I went on to give the characteristic features of a pluralistic society and its distinctive morality. This implies that moral pluralism is based on the inherent dignity of human beings – dealing with each individual or group on the basis of the fact that he is a human being. Secondly, it involves a re-examination of the whole question of the role of social organisation and their relation to man. Organisation cannot take on a life of their own. Originating in man and destined for man they must also serve man. Moral pluralism, therefore, is not only a morality for individuals regarding others but a morality of communities regarding others. Thirdly, there must be more dialogue between specialist and lay-people otherwise a totally different culture between them will emerge. Moral pluralism can therefore be said to depend on the attitude of argument of the various individuals and groups in the society, on their disposition to enter into dialogue with others in the society. Of course, to the understanding that different individuals have their differences. There is need for programmes of social education list the democratic character worn and expires. Such education must alert all members of their responsibilities and to the limits of the possible in the current situation, both at national and international levels. Bring together these diverse elements will imply compromise, but such comprise need neither relinquish principles nor suffocate initiative. In needs either opportunistic nor irresponsible but, based on the concrete fact that as man is born to live in society and grew through his interaction with his follow men, so too he must pay the price. And that both the price and the rewards are greater as he envisions the wider possibilities of such interaction.

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