

Does the Social Scientists' Scientific Methodology Produce Knowledge?

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ABSTRACT Just as a correct road-map leads the tourist to his destination, so knowledge and skills help human societies to solve problems. It is for this relationship between knowledge and skills and the ability of a society to solve problems that the efforts of social scientists aimed at providing the intellectual framework for solving the problems confronting mankind are of great interests to everybody. The development of the social sciences is quite recent, coming thousands of years after the flourishing of the pure sciences. Because scientists had many great feats to their credit, social scientists decided in the nineteenth century, to adopt the method of inquiry which the pure scientists had developed. It is quite obvious today that the social scientists have not been able to provide the necessary intellectual basis for achieving sustainable and rapid economic growth, industrialization, democracy and development; for solving the problems of unemployment and inflation; and for promoting global peace. This paper examined the social scientists' scientific methodology with a view to explaining why social scientists have failed to achieve their desired goals. The analysis was done in relation to the origin of the methodology, its content, and output. The theory of knowledge states that for a piece of information to qualify as knowledge, it must be true, it must be seen as a matter of certainty and indubitability and must agree with reality. Results of social science research rarely have these desirable features because they are principally derived from empirical inquiry. Besides, the methodology is mechanistic, abstract, ahistorical and has ideological, egocentric, ethnocentric, materialistic and indoctrinating colorations. Hence, social scientists' research scarcely produces knowledge.

INTRODUCTION

The method of inquiry in pure sciences – physics, chemistry biology and related knowledge areas, involves four principal steps: observation, hypothesis, experiment and theory formulation. This is the scientific method. The scientist is one who has an inquisitive mind. He or she is one who observes things keenly, wants to explain why various things are what they are, why certain phenomena occur, why a certain problem exists, etc.

In general, science is the knowledge of nature, the scientist only searches nature to reveal the wisdom of nature, absolute truths. The scientist measures certain properties and responses, and examines the results to see if there are any mathematical relationship among them. The mathematical relationships which scientists use to summarise their results are convenient ways of expressing the laws of nature.

The main purpose of studying science is to know the laws of nature. Technology is the application of the knowledge of nature (science)

to solving problems and making products. A society without a strong scientific capability cannot have a strong technological capability, for science is to technology what vocabulary and syntax are to a language.

Through the application of the scientific method, scientists have accumulated a lot of knowledge about nature. This in turn has led to the various technological feats that man has achieved so far.

Jealous of scientists, the social scientists decided to adopt the scientific research methodology. The 19th-century-evolutionary theories (developed by August Comte, William Summer, Herbert Spencer, Vilfredo Pareto, etc.), the 20th-century-neo-evolutionary theories (developed by Ferdinand Tonnies, Emile Durkheim, Max Weber, Talcott Parson, etc.), and the modernization theories of the 1950s and 1960s were the earliest applications of the social scientists' scientific methodology (Hoogvelt, 1982).

These theories claimed that Western Europe in the sixteenth century had achieved the maximum level of development of human societies.

The authors classified nations into two categories – simple (primitive) and complex (advance). African and Latin American nations were classified as primitive ones, whereas nations in the West were classified as the advanced ones. The evolutionist and modernist then proposed that primitive people and places may be made modern by transferring resources especially capital and technology from the rich West to them. This is the origin of technology transfer in its various forms as the main development strategy for Nigeria and other African nations.

Hoogvelt (1982) a sociologist, observed that the evolutionary and modernization theories are mechanistic and ahistorical perceptions of the human development experience. Nzimiro (1986), also a sociologist, in his book, *The Crisis in the Social Sciences: The Nigerian Situation*, lamented the irrelevance of Western social sciences to solving African problems. Blaug (1996), an economist, in his book, *Economic Theory in retrospect*, Fifth Edition, examined the theories of notable economists from the earliest time to the present time. His conclusion was that since the time of Adam Smith in the eighteenth century, economics has consisted of manipulation of highly abstract assumptions to produce timeless theories. He wondered how economists hoped to solve problems with their timeless theories in a world where development takes place over time.

Hagen (1967) an economist, while reflecting on the adequacy and relevance of existing Western social sciences' theories to solving development problems, observed that existing theories of development do not satisfactorily explain the variation in the wealth of nations. To Hagen, the variation in the wealth of nations lies in the differences in "the amount of creative energy which flows into technological advances" – this is determined by factors which economics has nothing to say concerning.

Kaldor (1967), an economist, also commenting on the adequacy and relevance of western development theories, observed that existing academic texts on general economics and on development were of little or no use from the point of view of understanding development, and would indeed be harmful in the hands of unimaginative people having influence in policy formulation in low income countries.

Ayres (1969), observed that economists' theories have never been concerned with physical production in the sense of what goes on in

factories and machine shops. In the seventeenth century, rather than analyse what was actually going on in the mines and factories, economists focused economic theory on establishing a relationship between price and value. Economists have always ignored the realities of production.

Heinecke (1986), a social scientist, wrote that the Nigerian social sciences is not relevant to solving Nigeria's problems today, because social science is foreign to Africans and its study, analysis and interpretation is to a great extent an expression of power and the ability of Westerners to get Africans to believe and do what they would otherwise not believe or do. In other words, social sciences indoctrinate.

Soludo (1998), an economist in his article: Investment in the growth process: A measure of the economists' ignorance in Africa, argued that there is no theoretical or empirical justification for assuming a short-run proportional relationship between investment and growth as virtually all economists do in applying the Harrod-Domar model. What is irksome, he continued, is the often blatant arrogance with which the economist pontificates about his expertise and formula. Nowhere is this more troubling than the persisting puzzle of Africa's growth tragedy and the economists' confusion or plain ignorance about the diagnosis and remedy. More often, the economists' diagnosis is casual and the approach naïve.

The Nigerian Economic Society (NSE), the society of economists and their friends in Nigeria, the oldest and most respected intelligentsia assembly in the country, held its 42nd Annual Conference in August, 2001. The conference which had the theme: Natural Resources Utilization, the Environment and Sustainable Development, had a Special Panel Session on the 'Teaching of Economics in Nigerian Universities,' as one of the two activities which complemented the main theme. In this special-activity session, the curricula, resources and methodology of teaching microeconomics, macroeconomics and development economics were examined critically. The special session on economics was the response of the NES to observed problems in economics and in the teaching of economics in Nigeria.

In the communiqué issued at the end of the conference, the NES said among other things in relation to economics and the teaching of economics in Nigeria:

(i) that the teaching of economics in Nigerian

- universities is in a state of crisis; and
- (ii) the crisis is best understood when viewed in relation to the crisis in the economy, the crisis in economics as a discipline and the crisis in the global economy.

Twenty-seven (27) PhD-students of Cambridge University recently put forward a proposal for reforming economics in the internet urging other people to support it. The proposal was released June 14, 2001. 754 students, researchers and professors had signed to support the proposal by June 8, 2003.

The proposal entitled: Opening Up Economics: A proposal by Cambridge Students, sought to encourage a debate on contemporary economics which they believe as defined by its teaching by a single approach to the explanation and analysis of economic phenomena. The students noted that at the heart of this approach lies a commitment to formal modes of reasoning that must be employed for research to be considered valid. In its present form they added, its effectiveness in contributing to policy debate is limited.

75 (seventy-five) students, researchers and professors from 22 nations who gathered for a week of discussion on the state of economics and the economy at the University of Missouri, Kansas City, USA, in June 2001, in agreement with the Post-Autistic Economics Movement and the Cambridge Proposal put forward the Kansas City Proposal. In it they stated that:

"...we believe that economic theory, inhibited by its ahistorical approach and abstract formalist methodology, has provided only a limited under-standing of the challenging complexity of economic behavior. The narrow methodological approach of economics hinders its ability to generate truly pragmatic and realistic policy prescriptions or to engage in productive dialogue with other social sciences.

All economics departments should reform economics education to include reflection on the methodological assumptions that underpin our discipline. A responsive and effective economics is one that sees economic behavior in its wider contexts, and that encourages philosophical challenge and debate."

Those who had signed the Cambridge Proposal by June 8, 2003 were from Europe, America, Asia and Latin America. No one from Africa had signed. The students who prepared the Cambridge Proposal requested economics

students and economists wherever they were based, who wished to formally and publicly back their proposal to e-mail then at pae_news@btinternet.com. Their website was indicated on the document as www.paecon.net .

It is clear from the views of social scientists themselves that there is crisis in social sciences. The problem therefore is not that social scientists themselves do not know that their theories are false and cannot solve any problem. The problem is finding alternatives to the theories of social scientists. This cannot be done except we know why social scientists' theories cannot address problems.

Today, the world is in pain and this has been the situation since the 1970s. The situation in most of the so-called rich West since the end of the golden age of capitalism, 1945-1970s, suggests that the economic systems have broken down; the long period of high unemployment may be compared with that of the period of the Great Depression in the 1930s (Cornwall and Cornwall, 1996). Poverty levels in the world especially in African nations is at record high levels in fifty years (World Bank, 2000). Wars are prevalent.

To the economic man, the mainstream neoclassical economists, the global economy would have been booming were it not for certain market imperfections and shocks, including policy errors of both commission and omission; governments have failed to implement credible restrictive policies; central banks failed to convince the public that until some low inflation target was achieved, they should continue to restrict aggregate demand, no matter the unemployment level (Cornwall and Cornwall, 1996). Social scientists continue to mill out millions of 'scholarly' papers and theses on a daily basis with a view to solving the problems of human societies and promoting a happier world.

Society at large agrees that three economic goals: rapid economic growth, full employment, stable prices are important to the happiness of all mankind. We can add to this list non-economic goals: peace, democracy, freedom and war-free world. It is quite obvious that social sciences have not been able to provide the necessary intellectual framework for promoting a happy world.

Obviously, it was the success which scientists were achieving and continue to achieve that attracted social scientists to adopt the scientific methodology. Why has it been difficult for social scientists to achieve any appreciable success?

This paper attempted to explain why the adoption of the scientific method by social scientists has not led to the expected success. The paper made suggestions for increasing the relevance of social sciences in promoting global peace and happiness.

This paper is made of four parts. These are: (1) Introduction, (2) Framework of Analysis, (3) Problems of Social Scientists' Methodology, and (4) Conclusions. The introductory aspect having been presented, the framework of analysis will now follow.

Framework of Analysis

There is always a thinking (theory) that underlies any action or behaviour. Unfortunately, not many people realize this fact. For example, not many African intellectuals realize that there is a famous Western intellectual basis which encourages African governments to neglect educational and other development activities. Similarly, not many African intellectuals are aware that the evolutionary and modernization theories constitute the intellectual premise for the adoption of technology transfer as a development strategy and for the adoption of the associated corruption-prevalent life style by African leaders.

In this same vein, many concepts and assumptions that are explicit or implicit in the social sciences' scientific methodology have intellectual bases. Some of these premises are presented in this section. They are to be used in analyzing the problems associated with the social scientists' scientific methodology.

1. What Knowledge is and not

According to the Oxford Advanced Learner's Dictionary, knowledge is:

(a) the facts, information, understanding and skills that a person has acquired through experience and education. (b) an organized body of information shared by people in a particular field: specialist/scientific knowledge. (c) the awareness of a fact or situation.

Literary definitions are not usually sufficient for the philosophers. Because knowledge is the noun from the verb 'to know,' some philosophers have posed the question: 'If knowledge is mere understanding, how do we differentiate it from learning, perception, awareness, belief, opinion, etc.?' They also questioned that 'because to know has implicit in it the requirements of

certainty, assurance, indubitability, etc., can we be justified in claiming to know something if we are mistaken about what we claim to know?' It is for this confusion about knowledge that the concept of knowledge had to attract the attention of philosophers like Plato, Socrates, Descartes, Roderick, Omoregbe, Chisolm, etc. These authors argued that knowledge can be seen as perception, as justified-true-belief, as cogito or consciousness and thinking and as a matter of certainty or indubitability, and as transcendental (Ozumba, 2001).

Epistemologists are philosophers who are concerned with the theory of knowledge. For the epistemologist, knowledge is knowledge if only it is true. The epistemologist criteria for identifying the truth among others include the following:

- (i) Truth is a generic term with abstract and concrete connotations.
- (ii) Truth is the opposite of falsehood.
- (iii) Truth is typified in reality of what it predicts.
- (iv) Truth is unchanging, eternal and static
- (v) Truth is a positive nature.
- (vi) Truth is categorical, substantive and unmitigated.

Truth may be defined as the quality of being the case, of being factual and of being correct and right as a pictorial category. A piece of information is knowledge, if it is actually the case, is real, truly represents state of affairs, is incorrigible.

Omoregbe (1998), identified seven theories of truth. They are: Correspondence theory; Coherence theory, Pragmatic theory, Dialectic theory, Semiotic theory, Redundancy theory and Relativistic theory. The correspondence theory is probably the oldest and most acceptable.

The correspondence theory of truth states that truth corresponds with reality or state of affairs. It has its mental, physical and linguistic dimensions. An idea is said to be true if it corresponds to reality whether mental, physical or spiritual. When what we say corresponds with the existent state of affairs, then it is true. When what we perceive corresponds with the physical object then it is true. The linguistic dimension is fulfilled when our statements represent the state of affairs or picture.

2. Types of Truth

There are at least six types of truth. These are: (a) Absolute truth, (b) Objective truth, (c) Relative truth, (d) Subjective truth, (e) Linguistic truth and (f) Pramatic truth (Ozumba, 2001).

Absolute truth is truth which transcends the physical realm, it is not dependent on human whims and caprices. It is unchanging, eternal and static. This includes divine and revelational truth.

Objective truth is the same as scientific truth. This is the truth arrived at through the process of objective investigation. It is the truth seen and confirmed by all parties concerned through all means available to them. Scientific laws such as water boils at 100°C under one atmospheric pressure, a straight is the shortest distance between two points are objective truths.

Relative truths are truths that are determined by factors other than absolute ones. These are truths dependent on situation, circumstance, etc.

Subjective truth is that truth based on the subjective opinion of individuals. The individual is the measure of what is true and what is false.

Linguistic truth is that truth that is derived from the semantics of language. This has to conform with acceptable rules of grammar and corresponds of the idea expressed by language and existing state of affairs. In language, meaning, sense, reference are key terms.

Pragmatic truth is one conceived from the point of view of usefulness, workability, etc. In this situation, truth becomes subject to the felt satisfaction of human needs.

3. Sources of knowledge

There are two main sources of knowledge. These are: (1) sense and (2) reason. These are represented by schools of philosophy called empiricism and rationalism respectively (Ozumba, 2001).

Empiricists believe that knowledge comes from the five senses – the sense of touch, sight, hearing, tasting and smelling. These are the windows through which the mind receives information about the world that surrounds the person and his mind. John Locke, David Hume and George Berkeley are British empiricist philosophers.

Philosophers who belong to the school of rationalism believe that knowledge comes through reason or what may be called the ratiocinative process. These philosophers believe that knowledge is derived from logico-mathematical reasoning. To these philosophers, experience only confirms the knowledge derived from intuition and deduction; experience only confirms the reasonableness and logicity of the knowledge derived from mental process, experience is in no way responsible for the existence of theoretical

knowledge. European rationalist philosophers include Rene Descartes, Benedict Spinoza and Gotfried Leibniz. Rationalists are theorists.

There has been a lot of controversy as to whether empirical knowledge can qualify as knowledge. If we are looking for indubitable, certain and absolute or objective truth, we may not find it within the realm of empiricism. But most of human knowledge comes from empiricism (Ozumba, 2001).

4. Types of Variables Relationships in Scientific Research

In pure science, various types of dependent and independent variables relationships exist. Mathematics does not determine which variable is the dependent or independent; it is the scientific relationship between the variables that determines the mathematical relationship between them. In scientific investigations, including theorizing, the form of the relationship between dependent and independent variables is not predetermined before experiment; analysis of data and theory formulation determine it. Theory determines the relationship between dependent and independent variables. Wrong theorizing may lead to interchanging the independent variable for the dependent variable and vice-versa.

The most popular way of demonstrating the relationships between dependent and independent variable is through graphing, using Cartesian coordinates. Values of the dependent variable are marked on the vertical axis (y-axis) while those of the independent variable are marked on the horizontal axis (x-axis). To obtain graphs, ordered pairs of the dependent and independent variables (x, y) measured from the origin, the (0, 0) point, are marked over the entire range of values recorded from experiments.

The following types of relationships among others may be obtained.

(a) *Linear Relationship*: This is the situation where increase in the independent variable leads to a proportionate increase or decrease in the dependent variable. This is probably the most popular type of relationship, because it is the simplest to interpret. However, it is of very limited application.

(b) *Quadratic Relationship*: In very many situations, the relationship between the dependent and independent variables is quadratic – bell shaped either opening upward

(parabola) or opening downward (hyperbola). The opposite sides of the curves represent a reversal of the trend observed in the other side while the base of the bell represents the transition from one trend regime to the other.

(c) *Complex Relationships*: In some situations, the relationships between two or more variables may be complex. The relationship may be cyclic: in this case the observed trend or phenomenon changes in form in a specified time interval; this time is the periodic time. The mechanism on which wristwatches and wall-clocks depends is a cyclic motion. In certain instances, the observed phenomenon (the dependent variable) or response may depend on more than one independent variable and the relationship would be described by a combination of typical relationships.

A limited scope of investigation produces a false relationship. Efforts must be put up to explore all possible situations for an investigator to be able to describe the true relationship between the dependent and the independent variables.

Problems of Social Scientists' Scientific Methodology

1) Ideological, Egocentric and Ethnocentric Problems

The adoption of the scientific method by social scientists had ideological, egocentric and ethnocentric colorations. The adoption was not aimed at solving any problem, rather it was to tell erstwhile dominated people that Western Europe achieved the modern industrial maturity because it adopted the capitalistic ideology and accumulated enough capital. It was also adopted to tell the rest of the world that Western Europe achieved the maximum development possible for human societies in the sixteenth century. Hence, if other peoples wish to be like Westerners, they should behave well, provide a conducive environment for the flow of Western capital, technology, institutions and culture to them. The evolutionary and modernization theories developed by sociologists are full of these ideological, egocentric and ethnocentric elements. These theories formed the intellectual foundation for the social scientists' scientific methodology which all social scientists - sociologists, psychologists, economists, political scientists, lawyers, accountants, etc., use today. Sadly, scientists have also been

uncritically using the so-called scientific methodology in socially-related research.

2) Technical Inadequacies

The second set of problems are technical in nature. They are many but a few of them will be discussed here.

a) *Lack of Understanding of the Scientists' Methodology*: To imitate a process, one needs to understand it. Hence, for social scientists to imitate scientists fruitfully, they need to understand the real scientific methodology used by scientists very well. Unfortunately, social scientists did not understand the method of inquiry in pure science before setting forth how they are to imitate it. How can one imitate a process he does not understand?

Consequently, social scientists uncritically adopted the scientific methodology without differentiating between the challenges which confront the scientists and those which social scientists claim to be interested in solving. To social scientists, the application of the scientific method developed for research in biological and physical sciences would transform studies of society into *social physics* that would provide for students of society the excitement which natural sciences were providing for students of natural sciences (DeFleur et al., 1977). Comte de Saint-Simon (1964), was the first social scientist to propose a science politique that would draw on the method of physical sciences. Thus, social scientist considered human societies as physical or mechanical systems rather than biological systems. This explains why social scientists are mechanistic in their approach.

Nature is the absolute truth. This truth is revealed to those who search for it. This is what scientists search for. No one can deceive every other person about the hidden absolute truth. The most objective method in the search is the acceptable one, and the result obtained from this method is the objective truth.

The scientists' methodology is systematically objective. Different things are measured in physical and biological sciences. However, certain fundamental quantities - time, length, mass, quantity of material (mole), electrons; and derived quantities, are measured in physical sciences. In biological sciences, the cell is the fundamental unit and it is the focus in research because it determines the properties of derived system like tissues and organs. Because physical

and biological systems have different features, different types of experiments are performed on them and the mathematical relationships which describe their properties are quite characteristic.

Social scientists claim to be concerned with understanding human societies and solving societal problems. However, their methodology is basically materialistic and based on their unique conception of the evolutionary process. While social scientists may claim that the individual is the fundamental unit of society, the focus of analysis is on material - money, urbanization, technology, etc. They say nothing about the linkage between the individual and the wealth of a society.

They are preoccupied by the acquisition and distribution of the available wealth; they cannot explain how a poor nation becomes wealthy. They only made the claim that it is money that creates wealth. The mechanistic and ahistorical claim about the special role of capital in wealth creation precludes developing true knowledge, because the claim does not allow those who believe in it to think objectively.

Because of the preoccupation with capital, capital and related things are always the independent variable in all social science research. Associated with the belief that capital and related things are always the independent variable, is the assumption that the relationship between the independent and the dependent variable is always linear. This explains why social scientists always get involved in correlation, regression and variance analysis. Social science research does not produce results in which the relationship between the dependent and independent variable is either quadratic or complex. Unfortunately, correlation and regression analyses do not establish cause-effect relationships. Real life problems are never simple linear relationships and they cannot be solved by mere relational analyses.

Social science research is based primarily on empiricism; it is rarely based on reasoning or theorizing. As has been noted, philosophers are quite aware that empirical investigations do not produce true knowledge as reasoning or theorizing through intuition and deduction does.

b) Disregard for Lessons of History: Hoogvelt (1976, 1982) rightly observed that the evolutionary and modernization theories which set the intellectual framework for the social scientists' scientific methodology are mechanistic and ahistorical. This criticism is not understood by many people.

Knowledge of the history relevant to an issue enables one to address most of the questions related to it. We shall examine this relationship with respect to two popular positions or theories of social scientists.

The first case is the ideological, egocentric and ethnocentric claim by evolutionary and modernist theories that Western Europe achieved the maximum development possible for human societies in the sixteenth century. This claim assumes that Westerners uniquely and separately developed through all phases of evolution without any cultural-borrowing. If Westerners who developed the fundamental premise for the adoption of the scientific methodology by social scientists had knowledge of history then, they would have explained where Western Europe and its people were before they became the most developed people in the sixteenth century?

The area occupied by modern Britain, France, Italy, Portugal and Spain was harnessed into the Roman empire at about 55 B.C. (Carrington and Jackson, 1954). This means that these modern and great nations of Western Europe did not exist before 55 B.C. Indeed England as a nation did not exist till the tenth century (Brooke, 1968). European powers did not exist when states and empires like Ghana, Mali, Songhai, Kanem Bornu, Benin and Oyo empires and the Hausa states flourished in West Africa during the period 500-1450 A.D. (De-Graft Johnson, 1955; and Clarke, 1971). The first British colony in the Americas, Virginia, was in 1606 (Baldwin, 1969). Chinese, Indian and Arab cultures were the Great Medieval Civilizations (GMCs); European culture was not one of the GMCs (Gottschalk, et al., 1969). These facts show that there is no known maximum development about the human progress. Western powers would only be world leaders for some time; other people would inevitably take over leadership from them some time in the future.

The second claim by Western social scientists is that which says that capital is the primary source of sustainable economic growth, industrialization and development. Westerners claim they achieved modern industrialisation and developed because they economized and accumulated capital. If African nations wish to develop, they only need to provide a favourable environment for Western investment capital to flow into African nations and make primitive people and places modern, they added. If the claim by western social scientists about the special role of capital in development were true, then Western intelli-

gentsia should be able to answer the following questions: How much did England accumulate before it achieved industrialization; how much does Nigeria and other African nations need to accumulate to achieve industrialization? In what form is capital preferably accumulated, is it in terms of loans and banks or roads, machinery and equipment, airports and seaports, etc? Nigeria and other African nations have been accumulating capital through borrowing since the 1970s, what is the situation today? Fundamentally, can capital be accumulated? Does the concept of depreciation not suggest that capital cannot be accumulated? Capital only accumulates depreciating assets (Ogbimi, 1997). Hence capital cannot be accumulated on a long term basis. Industrialisation is a long-term endeavour. Therefore, capital accumulation cannot be the primary source of sustainable economic growth and industrialization

The Industrial Revolution (IR) or Industrial Maturity (IM) is believed to have occurred in England in the period 1770-1850 (Gregg, 1971). By 1750 there were only 12 private banks in England; the number had increased to 843 in 1821 with 62 located in London (Hanson, 1977). The large increase in the number of banks was the result of the IR. The Bank of England had been founded in 1694 for the purpose of lending money to the Government of England. Private banking was often at first only a sideline to a manufacturer's or a merchant's main business. For example, the Lloyd's Bank was established by Samuel Lloyd who was in iron and steel business in Birmingham. The development of the banking industry in England was therefore post-industrialisation. It was the same in other Western nations. Gerschenkron (1966) examined the development experiences of Western nations and concluded that capital investment was not a prerequisite to their industrialisation.

CONCLUSIONS

The social scientists' scientific methodology has been examined in terms of the origin, its practice and the quality of the output. The problems of social scientist from the outset resulted from their misconception of human societies as physical or mechanical systems rather than biological systems. The evolutionary and modernization theories are typical of the type of information generated from uncritical adoption

of the method of inquiry in pure science by social scientists as from the nineteenth century.

The evolutionary and modernization theories are mechanistic, ahistorical, ideological, ego-centric and ethnocentric presentation of the human development experience. These features originated from the social scientists' scientific methodology which produced the theories. Because the social scientists' scientific methodology suffers from these debilities, its scope in investigating problems is very limited when compared with that of the pure scientists. Social sciences research is based primarily on empiricism; the information from empirical investigation is not the objective, indubitable and certain one that ranks high in the epistemologist assessment.

It is suggested that the scientific background of those who want to be involved in social science research be increased. Scientists would be better placed to adopt the scientific methodology to dealing with societal problems than those who do not understand the method of investigation in science. To effect this change within the present social and intellectual contexts, social sciences studies should primarily be postgraduate programmes.

It is to be expected that economics, accounting, political science, law and sociology classes with graduates of mathematics, chemistry, biology, English, Philosophy and nursing as students, would produce social scientists different from the ones produced in any university in the world today. The world, especially Africa needs scientific social scientists, not indoctrinated social scientists.

It is also suggested that all postgraduate students should take at least one course in epistemology. This is expected to increase critical thinking and improve the quality of research results.

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