ISSN 0189 - 855X

THE NIGERIAN JOURNAL OF PHILOSOPHY

JOURNAL OF THE DEPARTMENT OF PHILOSOPHY
UNIVERSITY OF LAGOS, LAGOS, NIGERIA

VOL. 15 NOS. 1 & 2

1996/97

ISSN 0189 - 855X

THE NIGERIAN JOURNAL OF PHILOSOPHY

JOURNAL OF THE DEPARTMENT OF PHILOSOPHY
UNIVERSITY OF LAGOS, LAGOS, NIGERIA

VOL. 15 NOS. 1 & 2 1996/97

CONTENTS

EDITORIAL POLICY

This Journal is not an organ of any particular Philosophical School of thought. It aim is to be an outlet through which the results of scholarly researches in philosophy are made available to professional philosophers both within and outside Africa, and a forum for the exchange of philosophical ideas. The Journal therefore encourages and welcomes scholarly research in any branch of philosophy. Book reviews and advertisement are also welcome.

Articles intended for publication in the Journal must be strictly philosophical and should be between 15 and 25 pages (quarto size) long, typed double spaced and should be sent in duplicate. All correspondence should be addressed to the Editor, The Nigerian Journal of Philosophy, Department of Philosophy, Faculty of Arts, University of Lagos, Nigeria.

PRICE

Nigeria
Individuals
Institutions
African Countries
Individuals $15.00
Institutions $30.00
India
Individuals $15.00
Institutions $30.00
Europeans Countries
Individuals $20.00
Institutions $40.00
U.S.A. & Canada
Individual $25.00
Institutions $50.00

South America Countries
Individuals $25.00
Institutions $50.00
Australia
Individuals $25.00
Institutions $50.00
Japan
Individuals $25.00
Institutions $25.00
China
Individuals $25.00
Institutions $50.00
U.S.S.R
Individuals $25.00
Institutions $50.00

SUBSCRIPTION

Within Nigeria:
Individuals
One Year
Two Years
Three Years
Institutions
One Year
Two Years
Three Years

Outside Nigeria
Individuals
One Year $25.00
Two Years $40.00
Three Years $60.00
Institutions
One Year $50.00
Two Years $70.00
Three Years $110.00

Notes on Contributors

Dr. Andrew Uduigwomen is a lecturer in the Philosophy Department, University of Calabar

Dr. I. Anele is a lecturer in the Department of Philosophy, University of Lagos.

Pro. C.B. Okolo is a Professor of Philosophy, in the Philosophy Department, University of Nigeria, Nsukka

Dr. Muyiwa Falaiye is a lecturer in philosophy, Department of Philosophy, Ondo State University, Ado-Ekiti

Dr. Ayo Fadaunsi is a lecturer in the Department of Philosophy, Ogun State University

Z. B. Ogundare is a lecturer in the philosophy Department, Ondo State University, Ado-Ekiti

Dr. F.N. Ndubisi is a lecturer in the Department of Philosophy, University of Lagos

Chris Agulana is a lecturer in the philosophy Department, University of Ibadan

AFRICAN CONCEPT OF WITCHCRAFT: A REPUTATION OF THE THEORY OF CYBERNETICS

BY

UDUIGWOMEN, ANDREW F. (Ph. D)
(LECTURER, I)
DEPARTMENT OF PHILOSOPHY
UNIVERSITY OF CALABAR
CALABAR, NIGERIA

INTRODUCTION

African Withcraft is a controversial subject that has long drawn the attention of Christian missionaries, colonial administrators, educated and civilized foreigners, philosophers and anthropologists. Consequently, a lot of literature has been published on the subject. While some authors have written to condemn witchcraft as the result of illusion or fantasy, others have written to defend the phenomenon of witchcraft. Since both positions are contradictory, they cannot both be true.

Those who claim that witchcraft is unreal or objectively impossible defend their position by arguing that it is neither observable nor susceptible to observational test. They might ask, "what methods, what tests, what observations could establish for example, that a man who has been demonstrably asleep on a mat through out the night has spent the very night feasting, or a dead person who has clearly suffered no cannibalistic ravages has been slain through witchcraft?..." 1. Their conclusion will be that anything that cannot be observed or tested is unreal.

Those who try to defend the existence of witchcraft take solace in the reality of African belief in witchcraft and the practical efficacy or consequences of the operation of witchcraft.

The interest of the philosopher is to certainly examine both claims so that in the end he can come up with a reasonable judgement. This paper critically examines the phenomenon of witchcraft in the light of both positions. Before I proceed, I should mention that I am greatly indebted to Professor P. Bodunrin, Ondo State University, Dr (Mrs.) S. B. Oluwole, Department of Philosophy, University of Lagos, and Ms. P. K. Roy, formerly of the Department of Philosophy, University of Calabar. Their

various expositions on the subject of witchcraft constitute my major sources of information.

DEFINITION OF, AND ATTITUDE TO WITCHCRAFT

No work on witchcraft will be complete without a preliminary survey of the definitions of, and the general attitude of scholars to the belief in witchcraft. In this paper I will chose as my working definition, Dr. Oluwole's definition which is as follows: "Witchcraft is usually regarded as a peculiar power by virtue of which some people perform actions which the ordinary man cannot normally perform. The most unique and mysterious characteristic of this power being the claimed ability of the witch to affect her victims, or perform actions, without any physical contact and using no medicine"[2].

Professor J. S. Mbiti also has a definition of witchcraft. Obviously, he was looking at the definition of witchcraft from the perspective of an anthropologist or a sociologist when he said: "...witches, who are mainly women, are people with an inherent power by means of which they can abandon their bodies at night and go to meet similar people (other witches) or to 'suck' or 'eat away' the life of their victim"[3].

Both positive and negative attitudes have been exhibited by scholars towards the existence of witchcraft. While those who show a positive attitude to the issue are of the view that witchcraft exists objectively, those who show a negative attitude to the subject deny objective reality to witchcraft. On the positive side, Dr. D. E. Idonigboye was obviously affirming the objective reality of witchcraft when he said: "The point I want to stress here is that when Africans talk of spirits in the sense I have been discussing, they are not speaking metaphorically nor are they propounding a myth. Spirits are as real as tables and chairs, people and places. It is this reality of spirits, an entity of doubtful ontological status in Western philosophy that provides a distinguishing feature of African traditional thought. Africans regard spirits as part of the furniture of the world, not merely as logical constructions out of certain uncountable manifestations"[4].

On the negative side, Dr. Oluwole quote Mr. E. O. Eyo as saying that witchcraft exists "not in reality but only in the minds of some people"[5]. Dr. Oluwole also quote J. R. Crawford in the following words: "Witchcraft is essentially a psychic act and is objectively speaking, impossible"[6]. Professor P. O. Bodunrin seems to share this view of Crawfords. This is

inferable from his contention that something which does not exist in our inter-subjective experience cannot be treated as objectively real. Supporting the negative attitude to the belief in witchcraft, Mr. O. B. Adeyinka (late)[7] said in a television programme that witchcraft exists only in the minds of psychologically or mentally deranged people.

One can go on quoting extracts to show the general attitude of scholars toward the subject of witchcraft. For lack of space, I shall in this paper limit my analysis to P. K. Roy's and S. B. Oluwole's exposition on the phenomenon of witchcraft.

P. K. ROY'S AND THE THEORY OF CYBERNETICS

Roy's explanation of the phenomenon is basically scientific and psychological, though some element of mysticism is also discernible in it. In her book Philosophical Foundations of the Nigeria Traditional Culture, Roy explains the phenomenon of witchcraft in terms of the theory of Cybernetics or Information Theory. The Oxford Advance Learner's Dictionary of Current English defined cybernetics as "The science of communication and control in machines and animals (including man)"8.

The principle of cybernetics states that the neuro-muscular mechanism of man is an instrument of communication as well as his sense-organs which receive external impulses. In her work quoted above, Roy refers to Sir James Frazer's principles of similarity and contiguity, arguing that these principles could only be sufficient to explain the belief that non-physical entities or forces can be manipulated through magical acts to produce certain effect in physical phenomena, if supplemented by the principle of Transmission. Frazer's principle of similarity is the principle that 'like produces like', which can be interpreted to mean that the effect of an event or occurrence resembles its cause. His principle of contiguity is the principle that things that have had physical contact continue to act on each other after they have been separated from each other.

Roy's principle of Transmission which supplements the principles of similarity and contiguity is the principle that the mind can affect other minds by a kind of physical or non-physical radiation transmitted through brain waves. Applying the principle of similarity and contiguity to the practice of magic, Roy avers that the intensity of emotion produced in the magician through the process of magical acts, produces a similar intensity of emotion in the victim causing his death[9]. Roy argues that if we add the principle of Transmission to this view, then we can say that "electrical impulses are transferred or transmitted into the victim's brain or nervous

system, to explain how the high frequency impulses are transmitted from the performer's brain into the victim's brain, thus causing the latter's death"[10].

Although the above primarily shows how the theory of cybernetics applies to the practice of magic, it is interesting to remark that Roy believes that her principle of Transmission also applies to the belief in witchcraft. She refers to the Azande who believe that witches emit a bright light which can only be seen by witches themselves and witch-doctors both in the day and in the night. Non-witches can observe the light occasionally in the night only. To buttress her point, Roy quotes Wienner as saying that "the light that fire flies emit are more or less periodical impulses, because the fire flies, like other animals such as cricket or frog are capable of emitting detectable visual or auditory impulses[11]. On the basis of this view of Wienner's, Roy argues that the light which the witch emits is also periodical or electrical visual impulses produced and transmitted by a witch's nervous system. Roy concludes that it is possible that the light emitted by the witch and its effect on the victim can be studied experimentally under controlled conditions.

CRITICISM OF ROY'S POSITION

Although this position of Roy's shows that the existence of witches cannot be dismissed merely on logical grounds, it nevertheless raises some problems.

The first problem is that the theory of cybernetics which she uses in explaining the phenomenon of witchcraft flies against Africa concept of witchcraft. To be precise, this theory cannot adequately explain the African belief in witchcraft. To the Africans, a witch is a person with a mysterious power capable of harming other people. Contrary to O. B. Adeyinka's view that witchcraft possession is confined to the uneducated and the unsound in mind. Africans believe that healthy, educated and well-to-do people can be possessed of this mysterious power. African concept of witchcraft consists in the belief that the spirits of living human beings can be sent out of body on errands to do havoc to other persons in body, mind or soul"[12]. The problem with the theory of cybernetics is that it cannot adequately explain this view of the Africans that witches can and do exist in disembodied form.

Another problem with the theory of cybernetics is that it cannot tell us how it is possible for the high frequency impulses to travel from one brain to another and cause harm on the victim. A lot of questions can be raised

concerning the nature and the modus operandi of these impulses. How are these impulses generated? Do they contain poisonous substances that could cause the death of the victim? If we say they contain poisonous substance, one could ask whether these substances are not capable of causing harm to the 'discharger' as well. Again we may ask: Why must these brain waves aim at a particular target and not another? What is the thing or force that directs these waves to an earmarked victim? Is there no possibility of the waves experiencing a horizontal swerve (like the atoms of Lucretius) thereby missing their target and hitting an unremarkable victim? These are some of the questions the theory of cybernetic cannot adequately answer.

Added to the above problems is the contention that there is no evidence to prove that one mind can affect other minds through the transmission of high frequency impulses. Professor Bodunrin rightly pointed this out when he quoted Daniel Cohen as saying that, "while the discovery in 1920 of electro-encephalography has shown that the brain does generate some electrical impulses and in theory it should be possible for one brain to receive and interpret the impulses of another brain, no evidence has so far been adduced that this takes place"13. If this view of Cohen's is correct, then it is only a logical possibility that the brain waves of one person's brain can affect the brain of another person. Only a logical possibility.

With these insurmountable problems, the theory of cybernetics as applied to the African concept of witchcraft inevitably breaks down.. The main undoing of the theory is its inability to account for how African conceive of the phenomenon of witchcraft.

S. B. OLUWOLE'S DEFENCE OF THE PHENOMENON OF WITCHCRAFT

In her article entitled "On the Existence of Witches", Dr. (Mrs) Oluwole spells out the justifications and consequences of the claims that witchcraft is a reality. She agrees with Professor J. S. Mbiti that witchcraft is a mysterious power. For her, when Africans claims to know that this mysterious power exists, what they seem to be saying is: :We know it is real because there are innumerable occurrences that prove its practical efficacy. We experience it, it is ever present with us, working in our presence"[14].

One fascinating aspect of Oluwole's exposition and of course the crux of the matter is her view that he who believes in the existence of witches must be prepared to validate his position and experimentally establish the

causal link or relationship between an event and the witch supposed to be the cause of the event. Dr. Oluwole attempts to do just this by postulating the following methods:

1. We may give an explanation of the nature and modus operandi of witchcraft power.
2. We may (have to) demonstrate that there is causal relationship between this postulated occult power and the mysterious event we cite to prove its practical efficacy.
3. We may try to prove our knowledge of this power by practically manipulating it. [15]

Dr. Oluwole argues that since each of these three methods is an acceptable method of scientific proof, any of them which provides the best explanation for the phenomenon of witchcraft will lend support to the claim that witches exist. We shall proceed to analyses the three methods one by one.

Dr. Oluwole calls the first method scientific method. But this could be true if it is the method of dealing with an accepted authentic phenomenon. As Professor Bodunrin puts it, "A thing is deemed authentic if its existence has been demonstrated or if acceptance of its existence is necessitated by a theory whose truth is compelling" [16]. In the case of wicthcraft, the modus operandi has not been explained. We are implicitly being compelled to accept its existence. But since the existence of witchcraft is shrouded in mystery, many possible explanations can be given to it. If this be the case, it would mean that we cannot identify the explanation for the existence of witchcraft. Thus, Dr. Oluwole's first proposition is not true.

Logically speaking, the demise of Oluwole's first proposition inevitably leads to the demise of the second. This is so because it is not possible to experimentally demonstrate the existence of a phenomenon whose mode of operation cannot be adequately explained. It is true that a constantly conjoined experience is established after we have repeatedly observed the occurrence of two events. But bear in mind that the method of constant conjunction only applies when the occurrences of two entities or events have been established. In the case of witchcraft, we have to rely upon, as our evidence, reports of personal experiences and oral reports. There is apparently no way of testing or verifying these reports. This is the reason most scientists and philosophers find it difficult to accept these reports. Of course, they believe that the subjective world of each of us seems to differ so much that a fruitful generalization will be arbitrary.

Some ten years ago or so, a young secondary school boy in my village confessed to have found himself become a wizard after eating a delicious meal prepared specially for him by his mother. In fact, he made this confession in the presence of other students while in school. The parents of the boy had to quickly rush the boy home to save themselves of much embarrassment. Now, no one can deny that boy had this strange experience. Of course, there is a way we can describe this experience as real. Yes, we can say that the experience is subjectively real. But would that not mean that we are living in a solipsist world, a world of fantasy, a world that continually hops in and out of existence? Of course, this view cannot escape the horns of solipsism, and this is the very reason why some scholars have hastingly concluded that witchcraft experience is illusory.

According to Dr. Oluwole's third proposition, we can understand the phenomenon of witchcraft if we can practically manipulate witchcraft power. Here again we encounter a problem. More often than not, we find an African boasting that the charm he has on his body works without fail because of the presence of some mysterious power in it. Now, the problem is that even if it is the case that the charm repeatedly works and there is no instance in which it is tested and found not to work, we can still not hastingly conclude that the efficacy of the charm is due to some mysterious power. The point is that the phenomenon presented to us is in dire need of explanation. If we can manipulate the power repeatedly and get the same result, we shall have discovered the laws governing the operation of witchcraft. But this feat has not been achieved even in this science-ridden century. But do these problems really shake the conviction of the African that witchcraft exists? The question shall be answered as we discuss the African concept of witchcraft.

AFRICAN CONCEPT OF WITCHCRAFT

To the Africans, witchcraft is not a fiction. In fact, in Africa, "it is idle to begin with the question whether witches exist or not. It does not matter what views observers of African culture may hold, but to Africans of every category, witchcraft is an urgent reality"[17]. Every African brought up in the village environment knows something about the mysterious phenomenon called witchcraft that seems to defy scientific explanations. In fact there is no African village where the belief in witchcraft is not held. Reported incidents of witchcraft manifestation cannot just be dismissed as superstitious, trickery or the result of the psychological state of the person who is said to be a witch. Africans treat witchcraft with awe.

Most of the misfortunes that befall man and the society are attributed to witchcraft. Sickness, plague, drought, bad harvest, barrenness, infant death, academic failure, failure in business and the like are attributed to wicthcraft.

Africans dread witchcraft so much that they find ways and means to protect themselves against the activities of this heinous power. While some wear charms and amulets, others eat concortions or have bodies incised with concortions smeared over it.

Medicine-men, diviners and witch doctors are the people capable of dealing with witches and their victims are indiscriminately male and female. Witchcraft is discovered by ordinary divination, practiced by men and women..."[18]. Suspected witches are normally subjected to certain ordeals which are meant to prove their guit or innocence. One interesting thing about witchcraft accusations is that they act as a releasing mechanism for tensions inherent in the system of social relations[19]. This is borne out of the fact that "witchcraft cases involve persons in conflicting social roles or in a state of tension with one another"[20], such as co-workers, co-politicians, co-wives in a polygamous home, and so on. Sometimes "neurotic and others who are a prey to jealousies and fears usually confess to be released from their complexes"[21]. In all these cases, one thing that is clear is that when confession is made and the necessary rituals are performed to tame the witchcraft power, tensions are calmed and the witch suspect ceases to be treated as a deviant.

Africans believe that witchcraft has an organised government with strict rules guiding members. It is believed that witches attend their meetings at nights ridings on the back of owls, antelops, leopards or nocturnal birds. This is perhaps the reason why nocturnal birds are closely associated with witches. Night-jars, owls, bats, black cats and snakes are popular among others ... Witches favourite haunts are tops of trees like Iroko or baobab. The purpose of their meeting is to engage in spiritual cannibalism. They elect celebrants in rotation who are charged with the responsibility of producing victims for feasting at which various parts of the body are devoured[22].

The African belief in witchcraft is necessitated by the belief that spirit and matter are indispensable. To the Africans, spirits are life-forces capable of animating things. Life-forces present themselves in a hierarachical order. At the apex is God. Next to God, is the world of spirits inhabited by all sorts of spirits including witchcraft spirits. Next to the world of spirits is the world of human beings, and lastly, is the world of vegetation.

African concept of wicthcraft is further necessitated by the belief of the

Africans that the human mind has two parts - "an active part and a quiescent part"[23]. Both the active and quiescent parts must be present in a body before a person can carry out his normal daily activities. The active part which is also called the 'shadow-soul' is the part possessed by witchcraft power. It is the part that rooms about and attacks victims while the body of the witch remains deeply asleep at home[24]. The quiescent part normally remains to incite deep sleep in the witch. If the active part is trapped somewhere or any harm is done to it while away from the body, this is reflected in the quiescent part which transmits the harm to the body. If the harm done to the active part is serious, the parent body may eventually die. There is an incident related to me by my late father: It all happened in my village that a young man was warned by a witch-doctor that a witch was planning to attack him through breeze while he would be plucking palm fruits. The young man was cautioned that whenever he sensed a very strong breeze blowing against him while on top of the palm tree, he should cut indiscriminately in the direction of the breeze. Surprisingly, what the young man was told came to pass. When the strong breeze came violently against him, he did as he had been instructed. On getting home that day he found that the mother's body had been badly battered with matchet cuts. When asked what happened to her, the old woman said that she fell on top of bush toilet. The woman died a few days later.

Space will not permit me to cite other numerous incidents my late father related to me. But suffice it to say that Africans have no iota of doubt that witches exist. Dr. Idonigboye was obviously speaking the minds of Africans when he said: "This is not mere sentimentality. Witchcraft is ever present with us"[26]. As a minister of gospel who has to counsel and pray for people on various issues, this author has come across people who plainly confessed to being witches and requested for prayers of deliverance. Even professor Bodunrin who is sceptical about the existence of witchcraft has this to say: The assertion that there are spirits or witches... is not necessarily false"[27].

CONCLUSION

Although the existence of witchcraft is an issue that baffles the intellect of the educated, civilized foreigner because of his inability to see the logic and theoretical framework of this hideous power, and also because of this inability to experimentally demonstrate the modus operandi of witchcraft, Africans treat witchcraft as an urgent reality. In the words of

professor Mbiti, "Even where allowance is made for cojuring trick. Obivous cheating, sperstition, manipulation of hidden means of communication and other skilled use of laws of nature, one is left and confronted with phenomena (i.e mystical power, magic, witchcraft and sorcery -addition mine) which as yet cannot be scientifically explained away... To my knowledge, there is no African society which does not hold belief in mystical power of one type or another. It shows itself, or it is experienced, in many ways"[28]. To paraphrase Chief Ade Ajayi's views, although the questions of the methods and techniques of witchcraft still remain a perplexity, it is, nevertheless, an indisputable fact that of all the spirits to be reckoned with according to African belief, those of the witches are of urgent painful importance[29].

NOTES/REFERENCES

1. S.B. Oluwole. "On the Existence of Witches", Second Order: An African Journal of Philosophy, edited by J. O. Sodipo, Vol. VII, Nos.1&2, January and July, 1978, p.25.
2. Ibid., p21.
3. J. S. Mbiti, African Religions and Philosophy. (London: Heinemann, 19977). p. 202.
4. D. E. Idonigboye. "The Idea of an African Philosophy: The concept of 'Spirit' in African Metaphysics", Second Order: An African Journal of Philosophy, edited by J. O. Sodipo, Vol.II, No.1, 1973, p.84.
5. Op. Cit. Oluwole, p.21.
6. Ibid., p.21.
7. Mr. O. B. Adeyinka (Late) was a long-standing lecturer of Comparative Philosophy (including African Philosophy) in the Department of Philosophy, University of Calabar. He had constantly argued against the objective existence of witchcraft, using as his basis of argument the idealist philosophy.
8. A. S. Hornby (ed.) Oxford Advanced Learner's Dictionary of Current English, p.215.
9. P. K. Philosophical Foundations of Nigerian Traditional Culture, (Ottawa: Canada Sociological Research Centre, 1985). p.25.
10. Ibid., p.25
11. Ibid., p.25
12. A. Ajayi, 50 Qs/As on West African Traditional Religion, (Ado-Ekiti: Omolayo Standard Press and Bookshops Co. (Nig.) Ltd.,

1981), p.102.

13. P. O. Bodunrin, " Witchcraft, Magic and E.S.P.: A Defence of Scientific and Philosophical Scepticism", Second Order: An African Journal of Philosophy, edited by J.O. Sodipo, Vol. VII, Nos. 1&2, January and July, 1978, p.39.
14. Op.Cit, Oluwole, p.26
15. Ibid., p.31.
16. Op. Cit., Bodunrin, p.41.
17. Op. Cit., Ajayi, p.102.
18. S. F.. Nadel. "Witchcraft in Four African Societies" An Essay in Comparison in Cultures and Societies of Africa, edited by Simon and Phoebe Ottenberg, (New York; Random House, 1965), p.40
19. Ibid., p.407.
20. Ibid., p.407
21. Op.Cit., Ajayi, p.103.
22. Ibid., p.102.
23. Op.Cit., Idonigboye, p.86.
24. Op.Cit, Nadel, p.40.
25. Op. Cit., Idonigboye, p.88.
26. Op. Cit., Bodunrin, p.197.
27. Op.Cit., Mbiti, p.197.
28. Op.Cit., Ajayi, p.103.

THE ARCHITECTONICS OF KARL POPPER'S FALSIFICATIONIST METHODOLOGY

By

Douglas I. Anele, Ph.D
Department of Philosophy
University of Lagos

1.1 BACKGROUND ANALYSIS

There is no doubt in my mind that Karl Popper's theories on the issues and problems of scientific research present a penetrating analysis of scientific method. In addition to this, I believe that practising scientists and those who wish to appreciate better the historical evolution of scientific knowledge will profit a lot from attentive reading of his writings on the logic of scientific research.

Popper's falsificationist methodology, with its deductivism, is an attempt, in a long line of theorising about science, to provide a prescriptive analysis of how and why the scientific enterprise progresses. It is a logical analysis of the method of science and lays bare certain methodological rules for playing the game of science. Thus, the writings of Karl Popper on scientific knowledge seek to provide a consistent epistemological context within which to situate the fact of the expansion of scientific knowledge, especially in the last two hundred years or so.

In this essay, we shall elucidate two key pillars in the falsificationist analysis presented by Popper in his fundamental work on scientific method, The Logic of Scientific Discovery. The pillars are falsification and corroboration. We shall discuss also the meaning and function of basic statements in scientific research. An explication of 'corroboration' and the part it plays in decisions pertaining to theory choice shall be given. We shall conclude our analysis with a brief description of the evolution of science as portrayed by Popper's falsificationist-anti-inductivist methodology, and point to two neglected problems of his theory of scientific method.

1.2 THE PROBLEM SITUATION

By the close of the second decade of the 20th century, some interesting theories dotted the intellectual landscape of Europe[2].

Foremost amongst them was Albert Einstein's theory of Relativity. Others included Marxism, Psychoanalysis, and Adlerian individual Psychology. All these theories claimed to be scientific. Nevertheless, there was a problem: How is it that it was quite easy for psychanalysis, for example, to explain every conceivable psychological phenomenon? Whatever happened appeared to confirm the theory of psychoanalysis, whereas the theory of Relativity made predictions which may conflict with possible experience.

Popper felt that this apparent strength, that is the seeming explanatory power of psychoanalysis was, in fact, its weakness. For it is easy to obtain confirming instances of theories, if we are interested merely in confirmations. But scientific practice is enhanced if confirmations are seriously entertained when they are the result of risky predictions. So, the confirmability of a theory in terms of the number of confirming instances, contrary to prevailing opinion at that time, proved to be an inadequate criterion for distinguishing a scientific theory from the unscientific. It became necessary, then, to articulate a theory of demarcation which preserved the scientific character of, say, Newton's or Einstein's theories while leaving out pseudo - or unscientific theories.

Such a demarcating yardstick, for Popper, can be found in the fact that the theory of Relativity made predictions which are incompatible with certain possible results of observation. Put differently, unlike psychoanalytic theory which is purportedly confirmed by whatever psychological phenomenon under investigation, the theory of Relativity makes bold and risky predictions which can clash with observable situations. The consequence of this is that the scientificness of a theory must lie not in its confirmability, but in its refutability. A theory which is incapable of clashing with reality should not be seriously entertained as a scientific theory. At best, it is a metaphysical theory which can eventually evolve into a testable (and so scientific) hypothesis.

Moving closer to philosophy proper, it can be observed that the problems of demarcation and induction provided the critical stimulus for Karl Popper's interesting and fecund disquisitions with members of the Vienna Circle.

Popper got his Ph.D in 1928, by which time the Vienna Circle was already formed. The Vienna Circle comprised a number of scientifically-minded philosophers and philosophically-minded scientists that held some loosely common opinions about scientific method, the task of philosophy, and the status of metaphysics in the architecture of human knowl-

edge.

Members of this circle, usually referred to as logical positivists, thought highly of the principle of induction. This they did despite David Hume's negative and sceptical conclusions about the inductive procedure as a basis for scientific knowledge.

Historically speaking, the problem of induction had been traditionally formulated by raising questions about the justification of the 'inductive inference'. This inference is the belief that the future will resemble the past. So, a cardinal inductive principle, in the traditional sense, is the inference from repeatedly observed instances to some presently unobserved instances[2]. The inductive inference operates within the supposition that expectative knowledge has as its basis the actualized instances of natural laws.

The aforementioned supposition was trenchantly criticized by Hume. He argued that, on logical grounds, no amount of observed instances can have any bearing on unobserved instances. He thus rejected the traditional concept of causation with its implied notion of necessary connection between events[3]. For Hume, we continue to operate with this logically unsound supposition because of custom or habit. We are conditioned, he says, by repetition to think inductively, a mode of conditioning which is necessary for our survival.

The logical positivist's refinement of the traditional principle of induction is augmented by the distinction they drew between theoretical terms and observational terms, and also by the introduction of the idea of protocol sentences. Observational terms refer to observable experimental situations whereas theoretical terms pertain more to theory and theorising[4]. As for protocol sentences, they are conceived as sentences purporting to report perceptual experiences which form the empirical basis of science[5]. In this connection, according to Rudolf Carnap, the logic of science has to investigate the forms of scientific language because the objectivity and empirical character of natural science lay on protocol experiences as reported in protocol sentences[6].

On the question of the task of philosophy, the logical positivist views were not encouraging. Ludwig Wittgenstein, one of the John the Baptists of positivism - another was Bertrand Russell - had stated that there are no philosophical problems; that all genuine philosophical problems are scientific problems; that the so-called traditional problems of philosophy are, by their very nature, pseudo - problems and that philosophical propositions or theories are pseudo - propositions or pseudo-theories[7]. Conse-

quently, it was not difficult for Wittgenstein to affirm that philosophy is bereft of any genuine theories. Its essential characteristic is not that of a theory but that of an activity. The task of any genuine philosophizing is to reveal philosophical balderdash, and to teach people to assert meaningful propositions.

This startling appraisal of philosophy influenced leading members of the Vienna Circle deeply. Therefore, it is not surprising at all that they adopted and adapted Wittgenstein's verifiability theory of meaning in order to demonstrate that metaphysics is nonsensical and meaningless. But the positivists hardly realised that their position leads to intellectual castration. For nothing is easier than to show that a problem is 'non sensical' or 'meaningless'. The important strategy is to articulate a conveniently restricted meaning for 'meaning' and you can now say of any inconvenient question that you are unable to find any meaning to it[8]. Expectedly, this tendentious attitude to 'meaning' led the positivists to use the criterion of verifiability as a touchstone for determining meaningfulness or meaninglessness of propositions generally.

Popper, meanwhile, was highly critical of the basic tenets of positivism. He rejected the notion that metaphysical propositions are meaningless quibble, and insisted that some metaphysical theories, as the history of science shows, had pointed the way to the invention of respectable scientific theories[9]. This, of course, suggests that metaphysical problems are genuine problems and of particular importance to science. Also, as a corollary, Popper argued that there are genuine philosophical problems, and that the positivist attempts at obfuscating philosophy is doomed to failure.

It is on the question of the proper method of science that Popper disagreed most with the positivists. He rejected induction, and in its place substituted a hypothetico - deductive methodology which emphasises the assymetry between falsification of theories, on the one hand, and their verification, on the other. According to Popper no scientific theory can ever be verified; however what is possible is the falsification of a theoretical system by the falsification of a conclusion deduced from the system.

2.1 SOME STRUCTURAL COMPONENTS OF POPPER'S THEORY OF SCIENTIFIC METHOD

As we suggested in the last paragraph, it is on the theory of method for the empirical sciences that the cleavages between Popper and the positivists appear sharpest. Certainly, a systematic discussion of the structural components of Popper's methodology will usually contain statements on

positivist methodology. For Popper developed his theories on scientific method with a critical eye on logical positivism. His responses to positivists' theories and their responses to such responses led to rapid and productive developments in 20th century philosophy of science, as we already noted also[10].

Unlike Carnap, Popper was not dogmatic about methodological rules. He regarded them as conventions, as rules of the game of empirical science. One of such rules which Popper proposed is that the game of science is, in principle, without end. Anybody who decides one day that scientific statements are no longer in need of tests retires from the game. The second rule is that a well tested hypothesis may not be dropped without 'good reason'. A 'good reason', for example, may be the replacement of the hypothesis by another which is better testable, or the falsification of one of the implication of the well tested hypothesis.

These methodological procedures are complemented by another rule which discourages the rampant use of immunizing strategems. All of them are, in turn, connected with what Popper christened "a criterion of demarcation". The logical positivists had tried to find a yardstick which demarcates scientific statements from metaphysical ones; this yardstick they found in the criterion of verifiability. Scientific theories, they believe, were verifiable and the method of verification is the inductive method, a method whose elaboration dates back to Francis Bacon.

Popper clearly saw that the logical positivist position on induction and demarcation - and their interrelation - was incoherent. On the positivist view, the theories of Marxism and psychoanalysis are verifiable (and so scientific) whereas Newton's theory of gravity (which, according to Berkeley, contains occult forces) is not. Again, the idea of the inductive method usually understood in terms of the collection of observations that confer higher probabilities on scientific theories meant that scientists simply have to look out for confirming instances only. This idea also suggests that the accumulation of repetitive instances of confirmations constitute scientific progress. In all this, the history of science tended to suggest something different, and the stage was set for a better characterization of the criterion of demarcation and of scientific method by Popper.

2.2 FALSIFIABILITY, FALSIFICATION AND CORROBORATION OF SCIENTIFIC THEORIES

Formally considered, the empirical sciences are systems of theories controlled by criticism. This suggests that the logic of scientific research is a

theory of theories[11].

Popper, having rejected the theories of the logical positivists on demarcation, scientific method and metaphysics, canvassed for the theories of falsification and corroboration. Thus, we can describe Popper's philosophy of science as a falsificationist methodology.

Popper's falsificationist methodology can be better understood in the context of falsifiable theories. And falsifiable theories are scientific theories. Falsifiability, for Popper, is the demarcating criterion between scientific and unscientific (metaphysical) theories.

Scientists are seriously interested in articulating theories that explain observable phenomena. Such theories are intended to give causal explanations of events. To give a causal explanation of an event means "to deduce a statement which describes it, using as premisses of the deduction one or more universal laws, together with certain singular statements, the initial conditions"[12]. If we wish to explain, for instance, the expansion of a particular piece of metal, we need to know the laws governing the linear expansivity of metals by heat, and the inital conditions of the metal. These enable us to deduce the expansion of the metal in question.

We see from the above two different types of statements, both of which are vital components of a complete causal explanation in science. They are

(a) universal statements which are hypotheses of the character of natural laws, and

(b) singular statements which apply to the specific event under consideration. Usually, what is called the cause (Aristotle's efficient cause) has the character of initial conditions[13]. Scientist often times seek for the cause of a phenomenon in the sense of locating a specific situation hitherto unnoticed (or ignore) which constitutes a necessary ingredient in the explanatory scheme. This meshes well with Popper's advise that the scientist should not abandon the search for universal laws and for a coherent theoretical framework; he should not give up attempts to explain causally any event he can describe.

The theoretical scientist is interested in such causal explanations in the form of theories that describe some of the structural characteristics of the world, and which allow him to deduce, in addition to initial conditions, the phenomenon to be explained. But what is the structure of the argument which the theorist employs to determine when his theoretical construction is wrong? The usual answer is that the inductive method or the probability calculus explains the structural relationship between theory,

experiment and initial conditions. Carnap, for instance, avers that the theory of probability should supply a precise quantitative explication of a concept which is basic in the methodology of empirical science; that is, the concept of the confirmation of a hypothesis in relation to a given body of evidence.[14]

Popper has a striking criticism of the idea that probability logic provides" the logical form capable of strictly representing the concept of knowledge proper to natural science"[15]. He argues that if Carnap was correct, then the probability of a given hypothesis would be determined by the truth-frequency of those statements that agree with it. But, he further explains, this would give the hypothesis a probability of $^1/_2$ in case, on the average, it is contradicted by every second of the singular statements belonging to the sequence of singular statements which can contradict, or agree with, the hypothesis in question[16]. This, obviously, cannot be the case, because it takes only a single well-established counter instance to overthrow a scientific hypothesis; the probability of such a hypothesis equals zero. So, Popper brought in the corroborability of scientific theories as a sort of substitute for probability.

In Popper's methodology, only theoretical systems capable of being refuted by tests are scientific. Such systems are falsifiable by systematic experimentation. Therefore, for Popper, falsifiability and testability mean the same thing, since every genuine test of a theory is an attempt to falsify it. Logically, the characterization of such falsfiable or testable systems involves the attempt to spell out the logical relations holding between a theory and the class of what Popper called 'basic statements'[17].

The system of basic statements include all self-consistent singular statements having a certain logical form, that is, all conceivable singular statements of fact. Such statements are important for the methodology of scientific research programmes because they are needed in order to decide whether a theory is to be regarded as falsifiable or empirical; they are also needed for the corroboration of falsifying hypotheses and the falsification of theories. As a result of this, basic statements must satisfy certain requirements:

(a) from a universal statement alone, it is not possible to deduce a basic statement;

(b) a universal statement and a basic statement can contradict each other.

The second condition is met only if it is possible to deduce the negation of the basic statement from the theory which it contradicts. When

this is added to the first condition, it would then follow that a basic statement must have a logical form whose negation cannot be a basic statement. Basic statements have the logical form of singular existential statements. For example, a statement of the form "there is so-and-so in the spatio-temporal region k" or "such-and-such an event is occurring in the spati-temporal region k", typifies a basic statement.

It may be observed that the conjunction of two basic statements, p and r, say, which do not contradict each other, is a basic statement too. Popper explains further that we may sometimes obtain a basic statement by joining one basic statement to another which is not basic.

Apart from the above formal requirements for basic statements there is what Popper described as a material requirement, a demand that a basic statement should describe an observable event. This requirement means that basic statements must be intersubjectively testable. It further dovetails to the stipulation that every basic statement "must either be itself a statement about relative positions of physical bodies, or... it must be equivalent to some basic statement of this... 'materialistic' kind"[18]. Basic statements should be about the position and movement of macroscopic and microscopic physical bodies. By bringing in the ideas of physical bodies and inter subjectively testable singular statements, Popper wished to preserve the objectivity of the basic statements which serve as tests for scientific theories.

At this juncture, we may recall that the principal reason for the introduction of the location 'protocol sentences' by the positivists was to avoid the situation of infinite regress entailed in the logic of scientific testing. Protocol sentences, which supposedly report subjective experiences, was posited as the empirical basis of science. We stop at these subjective experiences, or protocol sentences describing them because, according to Carnap, "... the inter-subjective testing of statements about perceptions... is relatively complicated and difficult[19].

Popper's position on this matter is diametrically opposed to Carnap's. Logically, he maintains, there is no natural end to the sequence of basic statements which can be subjected to tests. So, every test of a scientific theory, irrespective of whether it results in the corroboration or falsification of that theory, must terminate at some basic statement or other which scientists decide to accept. This avoids the infinite regress entailed in any experimental situation; and the practical import here is that scientists have to stop at statements describing the outcome of tests whose acceptance or rejection they are likely to reach agreement[20].

So far, we have seen that Popper introduced the idea of falsifiability basically as a criterion for the empirical character of a statement or system of statements. Its corollary, that is falsification, needs to be spelt out in detail, and this spelling out involves special rules which will tell under what conditions a system is to be considered falsified.

A scientific theory is taken to be falsified if there are accepted basic statements which clash with it. The theory is falsified when researchers discover a reproducible effect which contradicts it. Stated differently, we "accept the falsification if a low-level empirical hypothesis which describes such an effect is proposed and corroborated"[21]. We might describe a hypothesis of this kind as a falsifying hypothesis. Therefore, the concept 'falsification' which elucidates the conditions for the deductive testing of scientific theories, is logically linked with the idea of basic statements. A fortiori, the system of all logically possible basic statements serve to indicate the logical characterization of the form of empirical statements. The accepted basic statements, in their turn, form the basis for the corroboration of scientific hypothesis. Popper argues that if accepted basic statements contradict a theory, then they provide adequate grounds for its falsification only if they corroborate a falsifying hypothesis simultaneously.

The thread that emerges from the above is that the experimental situation in which the scientist finds himself more often than not involves crucial experiments designed to decide between two hypotheses. In so far as these hypotheses differ in some way, the experiment has to corroborate one or the other, and such corroboration is effected when the competing hypotheses are confronted with accepted basic statements.

One of the upshots of Karl Popper's rejection of the theory of induction, or, more precisely, of the theory of probability as a valid description of the relation between experiment and theory is his elaboration of the idea of corroboration. In his view, instead of arguing about the probability of a hypothesis with respect to a given body of evidence, we should try to examine what experimental tests it has withstood; in otherwords, we should try to assess the extent to which it has survived the tests it has been confronted with. Put in the form of an interrogative, our problem should be: How far has a particular scientific theory been corroborated by experiments? How well has it stood up to tests so far?

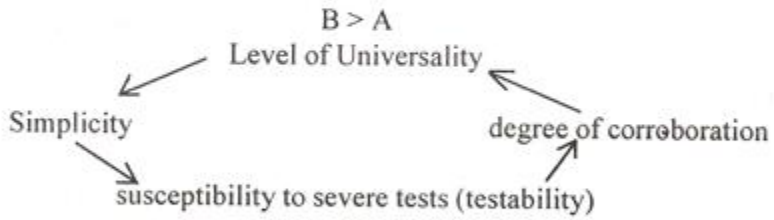
Some scholars have given what I consider a mistaken construal of 'corroboration'. W.H. Newton-Smith, for example, has argued that the theory of corroboration (and verisimilitude) cannot vindicate a rational model which is supposed to provide rationally justifiable principles of compari-

son for selecting one theory rather than the other vis-a-vis the goal of scientific research programmes postulated by Popper[22].

In order to evaluate the type of criticism mentioned above, it is better to expatiate first what Popper says about 'corroboration', and its bearing on the expanding frontiers of scientific knowledge.

A theory is said to be corroborated so long as it does not contradict the accepted basic statements. This appraisal can be derived if we have the theory and the accepted basic statements. Its main point is that these basic statements do not contradict the theory. Thus, corroboration is connected to the degree of testability of a theory and the severity of the tests which the theory has been confronted with so far.

If 'corroboration' is a statement of how far scientific hypothesis stands up to tests, in what way can we estimate this? Can it be established by enumerating the number of corroborating instances? For Popper, the answer is that such enumeration of corroborating instances does not suffice because it may happen that one theory is appraised as not corroborated to a higher degree than another one, despite the fact that very many basic statements have been derived with its help, and only a few with the assistance of the second. This implies that it is not just the number of corroborating instances which determines the degree of corroboration. Infact, the severity of the tests the theory in question is (and can be) confronted with at any point in time is more significant in this respect. It should also not be forgotten that the severity of tests, in its turn, is contingent on the degree of testability and, consequently, upon the simplicity of the hypothesis. Popper maintains that a hypothesis which is falsifiable in a higher degree, or the simpler hypothesis, is also the hypothesis which is corroborable to a higher degree. If we have hypotheses A and B as competing theories at a point in time, and we know that B has survived severer tests than A, then Popper's argument can be graphically represented thus:



Another aspect of 'corroboration' usually neglected by scholars is that the actualised corrobaration of a scientific hypothesis does not depend

solely on its degree of falsifiability. A highly falsifiable statement may only be slightly corroborated, or infact falsified. It is also possible that without being falsified, a hypothesis may be torpedoed by better testable hypothesis. When this happens, it is likely that the superseded hypothesis, or a close approximation to it, can be deduced from the triumphant hypothesis. In concrete terms, what determines what actually happens in practice is the logic of the situation; that is, the problem situation and proposed solutions within the scientific community at the time.

Popper was aware that the comparison of two statements or theories in terms of their degrees of corroboration is problematic. He points out that a numerically calculable degree of corroboration cannot be produced. We can only speak roughly in terms of positive degrees of corroboration, negative degrees of corroboration, and the like[23]. This may render 'corroboration' otiose in the logic of science. However, Popper's strategy for preventing that is the articulation of some methodological rules; for instance the rule that a falsified theory should not receive a positive corroboration appraisal, and adherence to the principle of parsimony in the use of auxiliary hypotheses.

In general, scientists regard an inter-subjectively testable falsification as final insofar as this falsification is well tested. In this manner the asymmetry which Popper correctly posited between falsification and verification of scientific theories appears in bold relief: a decision about the corroboration of a scientific theory made at a later date can lead to the replacement of a positive degree of corroboration by a negative one, but not the other way round. Characteristically, Popper saw clearly the crucial role of this methodological situation in the history of science when he stated that:

although... in the history of science it is always the theory and not the experiment, always the idea and not the observation, which opens the way to new knowledge... it is always the experiment which saves us from following a track that leads nowhere;... and which challenges us to find a new way[24].

To flesh out some of the structural newtworks of the idea of corroboration, we may reason along the following lines. The degree of corroboration of a scientific hypothesis will increase with the number of corroborating instances. But, as we observed earlier, mere counting of these instances is not enough. For one, we accord to the first corroborating instances far greater importance than the later ones. Whenever a theory is well corroborated, further corroborating instances merely raises its de-

gree of corroboration slightly. Matters take on a different turn if these new instances corroborate the theory in a new field of application. Here they may raise its degree of corroboration impressively. Theories of higher levels of universality tend to be corrobrated this way. Similarly, theories with higher degrees of precision can be better corroborated than less precise theories.

One may begin to wonder at this point whether Popper intends that the idea of the inventing theories of higher degrees of corroboration should replace the idea of truth as the aim of science. In otherwords can we hold that the aim of theoretical science is the production of theories with high corroborability without regard to the question of truth? This problem takes on added significance when we remember the recent historicist turn in methodological discourses, of which Thomas Kuhn is among the foremost exponents. Proponents of this school fastidiously use the history of science to challenge details of rational reconstructions of the scientific endeavour usually posited by philosophers of science. The presumed objective of scientific research programmes is stated by Popper variously as "discovery of truth", "explanation of reality", "invention of theories of greater verisimilitude" among others. But in his seminal work The Logic of Scientific Discovery, he was very skeptical in the use of 'truth' to characterise scientific theories[25]. In fact, for Popper, his falsificationist methodology does not need the concepts 'true' and 'false'. They may be substituted by considerations about derivability relations. Popper maintains that although he did not employ the concepts 'true' and 'false' in his analysis, it does not follow that we cannot discuss scientific theories in terms of their truth value. Still, he urges that the essential mechanisms of the growth of scientific knowledge can also be rationally reconstructed in terms of preference of bold theories which are falsifiable to a higher degree, and hence corroborable to a higher degree.

In common usage, and even among scientists, the concepts 'true' and 'false' are logical (non-empirical) concepts. Both concepts are timeless in the sense that when a statement is true or false, as the case may be, it is true or false forever. This explains the situation when, for instance, a theory which is taken to be true yesterday is now stated to be false today, in the light of new knowledge. It does not mean that the theory was true yesterday and false today; it simply means that we were wrong yesterday in thinking the theory true.

The concept of corroboration is quite different in this respect. To say of a statement that it is corroborated or that it is not corroborated is to some

extent a logical appraisal, and consequently timeless too; for it states that a certain logical relation holds between a theoretical system and some system of accepted basic statements. Nevertheless, we cannot just say of a statement that it is as such, qua statement, corroborated (in the way in which we say that it is 'true'). We appraise a statement as corroborated with respect to some system of basic statements, a system accepted up to a particular point in time. Popper writes, in this connection that:

> *'The corroboration which a theory has received up to yesterday' is logically not identical with 'the corroboration which a theory has received up to today'. Thus we must attach a subscript, as it were, to every appraisal of corroboration - a subscript characterising the system of basic statements to which the corroboration relates (for example, by the date of its acceptance)* [26].

From the foregoing, it is clear that 'corroboration' is not a truth value, it cannot be placed on the same pedestal with the concepts 'true' and 'false'. The last two notions are free from temporal considerations, in their objective senses. But one and the same statement may have different corroboration values all of which can actually be true at the same time. This is because they are values which are logically derivable from the theory in conjunction with the various systems of basic statements accepted at different times.

A further appreciation of the differences between the ideas of truth and falsity, on one hand, and the idea of corroboration, on the other, can be obtained if we consider this. We can say of a scientific theory, perhaps a newly propounded theory that it has hardly been corroborated at all so far, or that it is still uncorroborated. But it makes little sense to say of a theory that it is hardly true so far, or that at the moment it is still false[27].

3.1 THE FALSIFICATIONIST PICTURE OF THE EVOLUTION OF SCIENCE

The image of science presented by Popper is basically derived from the evolution of the methods of theoretical physics, although later a shift was noticeable in his writings towards biology[28]. This evolution is envisaged by Popper as a quasi-inductive process in which theories of some level of universality are put forward, after which theories of higher levels of universality are proposed, and in their turn critically tested with the help of those of the previous level of universality This process goes

on and on, and the procedure of testing is based on deductive inferences from the higher to the lower level. On the temporal plane, however, the levels of universality are reached by proceeding from lower to higher levels.

Therefore, theoretical physics (and science in general) progresses by step by step approximations from theories of lower levels of universality to those of higher levels. Continuously scientists put forward hypotheses of all possible levels of universality. Those hypotheses which are too far removed from the level attained by the testable science in the scientific community of the time may eventuate into a metaphysical system. If this happens, such a hypothesis cannot properly belong to the corpus of established scientific knowledge of the day. Nevertheless, if, with the passage of time, it can be confronted with some accepted basic statement in the form of a crucial experiment, then the system will contain some well corroborated theory as a first approximation. It will also contain something novel, and so something which can be tested. It follows that when this new system is corroborated through a crucial experiment, we may look upon it as a revolutionary step forward. This is what we normally describe as a scientific revolution, the extent of which is primarily dependent on the differential levels of universality between the new system and the old one. Popper stated the falsificationist picture of the evolution of science prosaically this way:

> *... the various ideas and hypothese might be visualised as particles suspended in a fluid. Testable science is the precipitation of these particles at the bottom of the vessel: they settle down in layers (of universality). The thickness of the deposit grows with the number of these layers, every new layer corresponding to a theory more universal than those beneath it. As a result of this process ideas previously floating in higher metaphysical regions may sometimes be reached by the growth of science, and thus make contact with it and settle*[29].

Popper argues that science is not a system of certain, or well-established knowledge, nor is it a system which progresses towards a state of finality. In science we do not know, in the sense of having certain and indubitable knowledge of nature. Rather we can only conjecture and guess. And our guesses are propelled by the metaphysical faith in regularities of occurrences in the objective world. Scientists, as human beings, apply their fallible but improvable intellectual and instrumental arsenal to un-

cover these regularities. They try, like tenacious fisherman, to catch as much of the knowable world as possible with nets in the shape of theories. Such theories are imaginative and bold conjectures which are coolly and meticulously controlled by systematic experimentation.

This careful and systematic testing of scientific theories is guided by theories also. It must be emphasised here that scientific experiments are planned actions in which every step is guided by theory. The human mind, in the quest for knowledge, is very active, never a tabular rasa, as the old empiricist John Locke would have us believe. Instead, as Immanuel Kant rightly observed, it is the researcher who formulates the question to be put to nature. It is the scientists who persistently confront nature with questions. Ultimately, it is the scientists again who give the answers, and revise these answers - and the questions - as the knowledge situation dictates[30].

4.1 REFUTATIONS AND CRITICISMS

The picture of science painted with the brush of falsification is a dynamic one. We have deliberately left out some of the later development in the picture to avoid cumbersomeness of presentation[31]. The key to this development is the understanding that Popper's philosophy of science, as hammered out after his classic work, manifests a deepening of his problems. It is a crystallisation of Popper's attitude to methodology in general which involves, in the words of Gerard Radnitzky " a systematic enlargement of the arsenal of weapons available in the fight against intellectual relativism[32]. And talking about relativism and its method, most of the criticisms of the theory of scientific method propounded by Popper rely a lot on the history of science and description of actual research processess as a critical tool. Some of the scholars who do this espouse relativistic views by abdicating the methodologist's throne to sit upon one belonging to a historiographer of science[33].

The use of information culled from the history of science to challenge a metascientific theory such as Popper's is open to a serious objection. In The Logic of Scientific Discovery, Popper offers a methodology, that is, rules and procedures as to the way in which scientific research ought to be done in order to reach a presupposed end. Popper says exactly this. But some of his critics conflate methodology in this sense with a description of actual research processes. Handling methodological problems uncritically with tools fabricated with the history of science is analogous to committing the famous "naturalistic fallacy", and can only breed con-

fusion in methodological discourse.[34] In the same vein, it is incorrect to ask, as a criticism of methodological falsificationism, whether anybody knows of a scientist who wishes to falsify his own theory. The possibility of falsification entailed by any serious test of a theory by testing its deductive consequences is a logical point, not a descriptive point. A scientist may wish to 'confirm' his theory, but in testing it experimentally, he opens up the possilibility of falsifying that theory. We must therefore not confuse logico-epistemological analyses of scientific investigation with description of how, infact, members of the scientific community have practised science.

A second criticism of Popper which is misplaced concerns the issue of the so-called inductivitist flavour in his philosophy of science. Some critics with keen noses for induction have smelled some inductivist rat in Popper's analysis of the rationale for preferring one theory rather than the other in science in terms of their degrees of corroboration. Popper, it would be recalled, has maintained that the relative degrees of corroboration of two competing theories in science say nothing whatever about future performance, or about the reliability of a theory in terms of its probability. The keynote of the criticism of the non-forward looking character of Popper's idea of corroboration with respect to truth is that, in the words of Adolf Grunbaum, "in the stated context .... criteria (for higher corroborability) require that some future-tensed statements are truth-preferable to others or have greater Popperian empirical verisimilitude - 'reliability' - than others. [35] That this criticism is farcical can be seen when it is realised that although a scientific hypothesis may be more corrobarated than another hypothesis up to a certain time t1, it does not follow that it will continue to be so at a later period t_1 - infact it falsified at t_2. This connects well with Popper's acceptance of Hume's contention that there is no rationally justifiable guarantee that the future will invariably resemble the past. So, a scientist who understands that a well tested (and hence better corroborated relative to another which is not so well tested yet) scientific hypothesis may be falsified by new experiments especially in a new field of application, will be better prepared to think up another than, say, a scientist who dogmatically clings to a well corroborated theory, in the hope of proving it true.

Stated differently, the moral to be drawn from the non-forward looking character of Popperian 'corroboration' is the need to reduce the craving to be right among scientists. Popper correctly argues that it is not really the possession of knowledge, of irrefutable (or probable) truth that makes the

man of science, but his indefatigably critical quest for truth. This persistent systematic quest for truth demands that the scientist should aim at discovering new, deeper and more general problems, and must be ever willing to subject tentative answers to these problems to ever renewed and ever more rigorous tests. Abandoning the quest for certainty, for wrong headed reliability, I believe, augurs well with this modest goal.

But the falsificationist analysis of scientific method presented by Popper in his fundamental work has some inadequacies two of which seem to me particularly important. The first inadequacy is the rather wholly and confusing manner in which Popper uses the words 'theory' and 'hypothesis'. I mention this inspite of Popper's healthy-minded warning that the discussion of important philosophical problems should not be hampered by unnecessary concern with words or meanings. In some passages, Popper uses the aforementioned words to denote a statement of natural regularity. [36] In some others he uses them to denote systems of falsifiable statements.[37] There is little doubt that scientific theories have to be understood as systems of statements in order to accommodate the ontological, methodological and heuristic aspects of scientific theories, and the modifications which a scientific research programme undergoes without necessitating a scientific revolution. Thus, although Popper employs 'theory' or 'hypothesis' for explanatory purposes often in the sense of a single statement which describes a universal law, it is clear that scientific theories are often more than single statements of regularities discoverable in nature. Usually, a scientific theory is dynamic and complex, a system of statements which goes far beyond what can be usefully stated fully in a single sentence. This is why Kuhn's concept of 'disciplinary matrix' as a tool of analysis constitutes an improvement over Popper's oversimple consrual of scientific theory.

It also explain the fact that within a theoretical system we may distinguish statements belonging to different levels of universality, and determine what part of the system was to be adjusted in the face of apparent falsification.

The second problem emerge when we ask: To whom are methodological rules addressed?[28] The most one can get from The Logic of Scientific Discovery is "to the individual scientist" together with hints that science is practised by a community of scientists. But Popper appears to have a single individual scientist in mind exclusively whenever he states his methodological position. This is quite correct to some extent because, at bottom, science is the vocation of individual human beings. Neverthe-

less, the social angle ought not to be ignored. Popper, in my view, fails to properly distinguish between methodological advice directed to individual scientists, on the one hand, and those addressed to the community of scientists as a whole, on the other. It is instructive to remember that Kuhn had consistently drawn attention to the fact that science is a community enterprise. He says, in this regard that:

> *If a decision must be made under circumstances in which even the most deliberate and considered judgement may be wrong, it may be vitally important that different individuals decide in different ways. How else could the group as a whole hedge its bets?*[39]

Popper, I am sure, knows full well that science is social in nature. As a result there is nothing to prevent different scientists from pursuing different lines of investigation at the same time. This diversity will ensure, as far as the knowledge-situation allows, that no promising lines of research gets neglected, and in this way distributes the risk among scientists in the different areas of research. Popper's neglect of this important feature of scientific practice leads him to make hasty and unwanted assertions about the scientist who defends a theory in the face of apparent falsification.[40] Such defence is very crucial for the growth of scientific knowledge since it exhibits to the utmost the potentials of a theory which might be overlooked if that theory is given up too easily. Consequently, any reasonable logic of scientific research should acknowledge the important role scientists who stick to particular scientific theories play in the growth of knowledge. Afterall, credible scientific theories are not easy to invent; and the requirement that before a theory is jettisoned another theory has to be available simply means that it is more rational to immunize an ailing theory than to toss it asides as falsified before scientists come up with another which not only survive a crucial test but also accounts for the success of the old theory.

SUMMARY

It was Yehoshua-Hillel who correctly stated that Popper had clarified in an unforgettable way the critical role played by theories and theorizing in the growth of science. The clarity and candour with which Popper presented his leading arguments in his major work throws a lot of light on the complex details of actual scientific work. Through him, we now know that no scientific theory can be sacrosanct. Any scientific theory, no matter its inspiration and successes, can be falsified and this onesided decidability is

anchored on the modus tollens of logic.

In addition, it is due to Popper that scientists can now accept bravely the falsification of their most cherished ideas, realising that such falsification could move human knowledge a step forward by showing that a particular explanation of nature is wrong.

However, no matter what advice a philosopher gives to a scientist in order for him to do his work better, it must be remembered that science is a social activity which may render any such advice unsuitable at group level. This is what I consider as the main Achilles' heel in Popper's theory of falsification and corroboration. For he neglected the methodological consequences of the fact that some members of a scientific community can stick stubbornly to a seemingly falsified hypothesis with perfectly good reasons. One would have thought that Popper, having realised the absence of algorithms for falsification in theory choice, could have availed himself of the social nature of science to justify rationally some degree of immunization. He did not do this, but instead gave little insinuations here and there that theories might sometimes be prevented from falsification by sparing use of adhoc and auxiliary hypotheses. He ought to have explored further this angle of scientific research, for it contributes significantly to our understanding of science as actually conducted in real life.

NOTES AND REFERENCES

1. For a lucid account of the intellectual situation at that time, and Karl Popper's responses to it, see Karl R. Popper, Conjectures and Refutations, London:
   Routledge & Kegan Paul, 1969, Pp. 33 - 37.
2. David Hume expatiated his basic epistemological conviction in his work An Inquiry Concerning Human Understanding, Indianapolis: Bobbs Inc. 1955 (ed.). For Popper's reconstruction of Hume's problem of induction see Paul A. Shilpp (ed.), The Philosophy of Karl Popper, La Salle, IIIinois: Open court, Vol. XIV, Bk. II, 1974, Pp. 1015 - 1024.
3. Popper interpreted this as the "bucket theory of the mind", Ibid., P. 1017.
4. G.G. Hempel, Aspects of Scientific Explanation, New York: Macmillan, 1965, P. 179; see also W.H. Newton-Smith, The Rationality of Science, Boston: Routledge and Kegan Paul, 1981, Pp. 19 - 28.

5 The term 'protocol sentences' was coined by Otto Neurath and cited by Popper in The Logic of Scientific Discovery, London: Hutchinson, 1959, P. 95.

6 Rudolf Carnap, Erkenntnis, Vol. 3, 1933, P. 228.

7 This happens to be one of Ludwig Wiltgenstein's conclusion in his major work Tractatus Logic-Philosophicus, D.P. Pears & McGuiness, (trans.) London: Routledge & Kegan Paul, 1961.

8 The Logic of Scientific Discovery, Op cit., P. 51.

9 Examples of such theories include the idea of a single physical principle or ultimate element, the theory of terrestrial motion, the fluid of electricity and so on. See H. Butterfield, The Origins of Modern Science, (2nd ed.), New York: Macmillan, 1957.

10 Victor Kraft has presented an interesting description of this. See his paper "Popper And The Vienna Circle", In Paul A. Shilpp, The Philosophy of Karl Popper, La Salle, IIIinois: Open court, Bk 1, 1974, Pp. 185-201.

11 Culled, with slight modification, from The Logic of Scientific Discovery, op. cit., P. 59.

12 Ibid., 60.

13 See Thomas S. Kuhn, The Essential Tension, Chicago: The University of Chicago Press, 1977, P. 24.

14 Rudolf Carnap, "The Aim of Inductive Logic" in Ernest Magel et al (eds.), Logic, Methodology and Philosophy of Science, Standard, California: Standard University Press 1962, Pp. 303-318.

15 The Logic of Scientific Discovery, op. cit., P. 257.

16 Ibid., Pp. 257 - 260.

17 Ibid., Pp. 100 - 105.

18 Ibid., P. 103.

19 Carnap, Erkenntnis, cited in Ibid., P. 205

20 Ibid., P. 104.

21 Ibid., P. 86.

22 The Rationality of Science, op. cit., Pp. 64 - 65.

23 The Logic of Scientific Discovery, op. cit., P. 268.

24 Ibid., P. 268.

25 Ibid., P. 274. However, after learning of Alfred Tarski's work which rehabilitated the then obscure correspondence theory of truth, Popper felt that he could operate freely with the concepts ' truth' and 'verisimilitude'. For Popper's account of this, see The Philosophy of Karl Popper, Bk. 1, op. cit., Pp. 112 - 114.

26 The Logic of Scientific Discovery, op. cit., P. 275.

27 Ibid., P. 276.

28 Ibid., P. 278.

29 Popper's conception of science is typified by science in its heroic sense; that is, science as a dedicated search for truth, for the growth of our knowledge of this wonderful world. Such science was practised by such men as Galileo, Kepler, Newton, Einstein and so on. See The Philosophy of Karl Popper, bk. II, op. cit., Pp. 977 - 978.

30 Some of the details of this development include the theories of content (both 'truth' and 'empirical'), versimilitude, the tripartite division of 'the world' amongst others. Some of these ideas will form the main focus of another paper. It is interesting to note that Popper correctly saw them as implict in his classic work.

31 Gerard Rahnitzky, "Popperian Philosophy of Science", in R.S.Cohen et al (ed.), Essays In Memory of Imre Lakatos, Dordrecht-Holland: D. Reidel Publishing Co., Vol. 39, 1976.p.506.

32 I borrowed this expression with some adjustment from Alan Musgrave's paper "Method or Madness", in Ibid., P. 487.

33 Radnitzky, Ibid., P. 506.

34 Adolf Grunbaum, "Popper Versus Inductivism", Ibid., P. 247.

35 See, for example, The Logic of Scientific Discovery op. cit., Pp. 60. 87n, 267.

36 Ibid., P. 71 This is also evident where Popper made references to actual scientific theories, none of which can be usefully construed as a single statement.

37 In Chapter III of his classic work, our author presents a diffuse concept of 'theory'.

38 Similar issues has been raised by Alan Musgrave in his analysis of Imre Lakatos' methodology. See musgrave's paper "method or madness, "in R.S.Cohen et al (eds), op. cit, pp. 479 - 482.

39 Ibid., p. 479.

40 As a matter of fact, one basic criticism Popper has against Kuhn's theory of normal science is the latters' defence of a certain amount of caution in interpreting outcomes of falsifying experiments. See "Normal science and its Dangers" in Imre Lakatos & Alan Musgrave (eds), Criticism and the Growth of Knowledge, Cambridge. Cambridge University Press, 1970, pp. 51 - 58.

Intellectuals, Moral Education and Public Morality.

By

Professor Chukwudum B. Okolo,
Department of Philosophy,
University of Nigeria, Nsukka.

"IF a question can be framed" said one of the linguistic philosophers, Wittgentein, "it is possible to answer it". What we have pegged as the prop of this paper is that intellectuals can improve public morality. This, in effect, is our answer to the question whether intellectuals are equipped to improve public morality? For intellectuals to do this effectively and meaningfully requires that morality itself must be the foundation of our educational system. We begin the paper by an investigation of the Nigerian situation, and we go on to show both how and why the intellectual can improve public, morality, and why morality itself must be the foundation of our educational system.

The Nigerian situation

It is not simply a wild dream to think of Nigerian intellectuals as possible moral cleansers of the Nigerian society. But because, by chance or designs, they are de facto leaders of thought, in the nation, or in its biblical imagery, the "light of the world" (Mt. 5:14) they may well also be in a position to influence good behaviour in the lives of the citizens.

The urgency of this expectations stems from the increasingly appalling, moral degradation, if not degeneration of the Nigerian society itself. For, Nigeria has a glaring problem, a moral one, I put it starkly elsewhere thus:

> It is not at all pessimism but realism to say that Nigeria is an open society where evil people operate openly, too. Perhaps she is the only nation in the world whose criminal record can easily be said to be as complex as its population, and, perhaps, too, the only nation whose average citizen's moral judgement on her, is mostly negative and disappointing. Serious, and to call a spade a spade, most Nigerians today, irrespective of profession and status, know quite well that all is not well with the country, that morally Nigeria is sick.

The basic problems, socio-physical in nature such as lack of good roads,

traffic jams in cities, poor and inefficient communication systems, bizzare inflation and consequent high cost of/living, etc easily strike the eye, humiliate the citizens and certainly affect the quality of their lives in various ways. But these hardships can be tolerated and, perhaps, with time adjusted to and put up with. Whereas there are much more serious, basic problems which daily threaten the very survival of the nation and citizens alike. These are spiritual and moral in nature.

Among them are loss of sense of truth, honesty, justice, moral, intergrity, lack of moral conscience by public officials, businessmen and professionals; lack of restraints and discipline in private and public lives of the citizens; lack of moral sense of right and wrong in pratical life, in such matters as business deals, contracts, and the like. "As a matter of fact", I, again, said "what is really very disturbing about Nigeria and Nigerians is the seeming conviction on the part of many that only crime and criminal ways pay; which is really, to say that they are the only means (quick and certain) by which someone becomes important, rich, respected, easily powerful and a crowd puller in Nigeria"[2].

This is corruption through and through in all its deadly influences in high and low place about which Professor Chinua Achebe has eloquently written. "Corruption in Nigeria", he says, "has passed the alarming and entered the fatal stage; and Nigeria will die if we keep pretending that she is only slightly indisposed"[3]. It is precisely in the context of "death" that is to say, moral death faced by Nigeria and Nigerians that we think about public (and private) morality.

But public morality, what is it? We first of all reflect on what "morality" is all about and then "public morality". Man is a moral being (from Latin, "mos", custom, conduct, way of life) because he is by nature conscious of right and wrong. He perceives some things to be right in the sense of being consonant with his nature and other thing as not in accord with it. To know and speak the truth, for instance, is in tune with man's rational nature; whereas to tell a lie or deceive others is not. Morality therefore is that property of an act by which it is judged to be right or wrong; in harmony or disharmony with man's true nature as a rational being.

But because man is not by nature isolated or individualistic but social, gregarious and political as philosophers such as Plato, Aristotles, and other have defined him, morality is also said to have its social, political, or public dimensions. Man's actions both good and bad, influence others in concrete, definite ways as members of a family or community. For as

Professor Joseph Omoragbe truly says:

Men are by nature interdependent; they depend on one another for their survival and for their well-being. This is what is meant by the saying that man is a social animal. No man is an island; no man is self-sufficient, no man can provide for himself all that he needs for his survival and self-developement[4].

Public morality is the influence of conduct, individual or collective, good or bad, on society or the public. A society becomes morally healthy or unhealthy to the extent individuals are morally healthy or unhealthy. Thus there is a very close bond between morality and society. "The relationship between the two can be compared to the relationship between the soul and the body. Morality is the soul of the society"[5]. In its full stretch, this means that morality is the pulse or the heart-beat of the society, its very foundation, in other words. "The moral laws are the foundation on which the society is structured", Omoregbe, again, says: "hence when the moral laws are persistently violated, the foundation of the society will be shaken"[6]. It certainly does mean that immoral actions of individuals or groups are direct antithesis to the health, stability and progress of the society. Naturally, on the contrary, the good life of the citizens, their obedience to the moral laws (of God, nature, church, society) is a true index of the vitality, stability, and healthy development of the society.

Nigeria And Public Morality

When it comes to public morality, the way or ways conduct, private and collective, influences or can influence the Nigerian society or individuals in it, Nigeria, again, has a problem, apparently an intractable one, as we mentioned before. Her record or history of public morality is totally disappointing. Corruption appears to head and summarise the statistics. Here is how Omoregbe put it:

Nigeria is a country richly endowed by God with both natural and human resources, enough to make the country great and life in it comfortable for all the citizens. But unfortunately, Nigeria is one permeated with corruption in every sector, from Government circles, government institutions, parastatals, to the private sector. Embezzlement of public fund... deals with contractors handling government projects

with resultant over-inflated contracts, ten-percent kick-backs... are common features doting every page of our national history since independence".

The Weekly Star (one of the national dailies) once headed a caption, "The Nigerian and Corruption" and boldly stated that "keeping an average Nigerian from being corrupt is like keeping a goat from eating yam"[8]. Prof. Achebe added his own sober comments. "Nigerians are corrupt", he says "because the system under which they live today makes corruption easy and profitable. They will cease to be corrupt when corruption is made difficult and inconvenient"[9].

What is really clear to the average Nigerian and reflected in the lives of the people is that public immorality appears to be at its peak at this point in time in Nigeria. For one easily sees the will-to-be-immoral, the full flowering of the criminal mind in the many faces of crimes committed in this country, namely, the many forms, range, and magnitude of corruption and corrupt practices, the almost total lack of public sense of right and wrong, public conscience, public spiritedness, self-discipline, patriotism, and the like. What appears to dominate individuals as well as groups is unbridled self-interests, the dominating desire to have more rather than be more; acquisitive rather than productive instinct. This is certainly the picture and status of public morality, or, should we not say, "immorality" in Nigeria?

"I count him braver one who overcomes his desires than him who conquers his enemies", Aristotle the great Greek thinker said. "For the hardest victory is victory of self". What easily conquers self in Nigeria is money in its trinity of desires, namely, to accumulate it; show it off and squander it. And when carried into politicis, economy, education, the army, police even religion or the churches, as it certainly has in Nigeria, its effects on public morality, law and order become predictably devastating on the lives of the citizens and nation alike. Once more corruption in high and low places is now witnessed as the order of the day in the army, politics, business, educational institutions, etc.

Intellectuals and Public Morality

But because intellectuals are public beings, social in nature, enjoying at the same time public trust as leaders of thought, they must be connected with public morality, with advancing, for instance, public sense of right and wrong, public order, right goals and values for individuals and

society. People usually look on the intellectuals and professionals, for that matter, not just as enlightened leaders but also as guides to good conduct, to a good moral life. One cannot be a guideto right living, insisting on right values and priorities without developing a high moral sense and in practice improve and promote public morality.

More importantly, too, true education and morality are inseparably linked. Philosophers of education tell us that education banishes ignorance and liberally criticizes peoples values, priorities; and redirects societal goals and pursuits. As a matter of fact, Plato in his Laws is clearly of the view that it is education which determines whether man becomes the tamest or the wildest animal on earth. "If man lacks education", he says "he is the most savage of beasts". In Plato's view, man becomes "the most savage of beasts" not from lack of education (of the intellect only, of the book, or as John Stuart Mill technically called it, "education of crain") but from lack of morality. For education has no meaning for Plato and many other educationists without morality. The educated man is above all a moral person since man is essentially a moral being. The Danish philosopher-theologian Soren Kierkegaard conceives him essentially as a "worshipper".

Remove morality, the sense of right and wrong from education, politics, and society, what would result? A Plato would answer that men would turn out to be the wildest animals on earth. The great Saint Augustine in his The City of God answers that political parties would turn into "gangs of criminals on a large scale" if one were to remove "justice" or morality from politics. And society without morality would be utter chaos.

What we are emphasizing is that if education is really to benefit the individuals and society, it must, as Professor Omoregbe says, "be imbued with morality in a very high degree, otherwise, it would do more harm than good in the society"[10]. Education must not be separated from morality since the latter is inseparable from integrated personality which true or ideal education eminently fosters.

For the British philosopher Bertrand Russell, it is the development of excellent and hence morally integrated individuals that education aims at. "Education", he writes, "is the key to rear up the new man of excellence for his life in the society". Even the holistic paradigm of education in traditional Africa emphasizes mainly moral integrity, honesty and other moral qualities.

Consequently if ideal education is to produce integrated personalities individuals, the highly educated people, the intellectuals, for instance,

should at the same time be people with keen moral sense. Education of the intellectual alone, that is to say, without morality or with little or no sense of right and wrong, honesty, justice, altruism, etc simply turns out individuals who are, as Plato put it, "the most savage of beasts", people truly destructive not only to the themselves but ultimately to the society.

On the contrary, intellectuals who are truly educated men par excellence must be consequently imbued with a high degree of moral sense and should not only be good themselves but strive to see that good is done in both the public and, if possible, private lives of the citizens. They should remain fully sensitive to and often offended by public immorality and should attempt to do something about it, too. For ideal educated individuals (those with trained moral sense as well) do not and should not compromise with situations of evil, injustice, wickedness, and the like. Consequently the great tragedy of any nation, developed as well as developing, is to produce intellectuals with a high standard of education, "intellectual giants" but with low or very little moral sense, moral probity, moral discipline, that is to say, they turn out "moral dwarfs", in other words, as we said above, these "morally under-developed" intellectuals are a menace to themselves and to the society in which they live. Usually they are the source of indiscipline, chaos, frustration, immorality in the society or local community.

Our summary point here is that since ideal or true education is inseparable from morality, from the pursuit of moral ideal characteristic of man as man, intellectuals as public people and with a mandate to guide others, must somehow be connected with public morality advancing, for instance, its public awareness, promoting public sense of right and wrong and of course with setting up moral standards for others by their examplary lives since a moral cliche has it that the best teacher is one who teaches more by example than mere words.

The Nigerian Perspective

What we have actually established so far is that intellectuals, in all parts of the world, for that matter, not only can but should improve public morality which obligation stems not only from the fact of their being educated more (intellectually and morally) than the average citizen but also from their position of public trust as intellectuals and, hence, moral leaders of the community or society in which they live. But what is our special concern in this paper is the Nigerian situation and its notorious

predicament of public and private immorality. Our interest, of course, is public morality and the rather knotty problem is how the Nigerian intellectuals can and should improve it, not just the public sense of right and wrong but somehow make others do good and avoid evil.

The evils to avoid in Nigeria and which coincidentally dent the public image of the nation as well as its citizens are clear to all, namely, bribery and corruption in high and low places, cocaine peddling, kick-backs in contracts, expo-culture, secret-society culture, sex for sale (prostitution), swindling of public funds, examination mal-practice, irresponsibility and non-accountability particularly among public officers, different forms and shades of 419 practices, etc.

These crimes by no means give good or morally good image of Nigeria and Nigerians at home, worse still, abroad as we all know quite well. At home, in Nigeria, for instance, the national dailies, the Daily Times, for example, have more than ones described Nigeria as "a nation without moral scrupples", "a sick society" (morally), etc. Also in the "foreword" to a well-written work designed by the author to spot-light the bad public image of our nation, Nigeria, Paul Idagu points a really revolting picture of the moral health of Nigeria with a touch of class, thus:

> *Nigeria, today, is plagued all about with various kinds of social-ills, notably, self-abuse, child abuse, sex-abuse, threat to life, threat to property with greed, avarice and pride ba sic to all of them*[11].

It does not at all need any degree of in-depth reasoning to establish the fact that neither abroad nor at home does Nigeria have a good moral public image. What we are, however, faced with is how the Nigerian intellectuals could help to improve this bad image which is embarrassing to so many, so often.

First of all we advocate that as an educational policy, Nigerians, the government, the people, must return to the traditional concept of education, not just in the sense of holistic view of education in traditional Africa, for instance, but more so in the traditional view of great philosophers of education such as Socrates, Plato, Aristotle and in modern times, Bertrand Russell, J.S. Mill, R.S. Peters, etc who see education as inseparable from morality. In this sense goodness and knowledge become not just closely related but necessarily complementary to each other in the sense of co-building up the individual, making him or her not only intellectually educated but morally educated as well. Moral education whatever form it takes, certainly makes one, for instance, fully sensitive of a

hierarchy of values, discern the difference between to be more and to have more; quality of life and its quantity, peripheral, transient honours and true, more permanent ones, etc. In practical life, too, sound moral education makes individuals cultivate such moral habits or virtues as self-discipline, respect for elders, honesty, truth, self-pride, patriotism, many of which have disappeared from our highly educated Nigerian youths, to say the least.

The Nigerian intellectuals conscious of this holistic or integralistic view of education and who are themselves morally educated as well would therefore be in a better position to lead and teach others more by example of their lives than by verbal pronouncements. For it is generally agreed that to lead by example is one of the potent ways to fight crime and its effects on others and society at large.

Also conscious of their elevated class and status in the society, being more educated (intellectually than the average citizen, the politician, the trader and the like), the Nigerian intellectuals would certainly see the inner logic and conviction for remaining above board, insulated as it were, from the prevailing public vices of the society as they reflect today in the institutions of higher and lower learning in the country, such vices as misuse of funds, research and other grants, allocations, etc, sex-for-grade culture, undue exploitation, abuse of office, nepotism, in-group and out-group syndrome, academic victimization of students, hand-out trade and counter-trade, so to speak, etc. For intellectuals in Nigerian schools, polytechnics and universities, for instance, to steer clear of these notorious public vices endemic in our society today is itself a great improvement on public morality.

Lastly we must mention that being highly educated and consequently more moral, more conscious of right and wrong, self-discipline, self-pride, honesty, upright living and the like, the Nigerian intellectuals, on secondment as ministers of various portfolios in the government, directors and managers of kinds and number, should not be expected to carry out their public duties the Nigerian way defined briefly here as the accumulative way (the phrase the average Nigerian easily understands). They should not only maintain a high degree of moral probity (or resign their assignments as is the practice of the white man, advanced nations generally) but see to it that a high standard of public morality is maintained within their sphere of influence and control. Life of compromise in this respect is to betray a trust and we must honestly admit that many Nigerian intellectuals have betrayed their mandate and public trust in this regard.

Put Back Morality Into Education: Concluding Reflections

Coming back to our point of inquiry, "Can intellectuals Improve Public Morality?", we emphatically say that intellectuals not only can but should improve public morality. From the perspective of the Nigerian environment, we firmly assert, too, that the Nigerian intellectuals should endeavour to improve public morality in Nigeria and with these thoughts, we conclude this essay.

First of all with regard to our educational system, particularly against the backdrop of distressed economic and socio-political conditions under which it functions, we advocate that the Nigerian government and policy-makers in education should not only be concerned about quality and relevant education in the country, but be concerned, as a top-priority need, about moral education in schools, elementary, secondary and even tertiary institutions. Moral education in elementary and secondary schools is crucial. The ultimate aim of well-balanced and integrated education is to produce the educated masses, intellectuals, educators, professionals, etc to be not only intellectually knowledgeable but morally sound as well, such that the educated are equally morally good individuals in practice, with a pronounced sense of right and wrong; respect for moral law and order, self-disciplined etc. For to educate the mind or the intellect alone with little or no moral education as seems to be the case with the post-war generation of Nigerians, is merely to produce savages or, in Plato's imagery, "wild beasts". Right now in Nigeria, as far as public morality is concerned, we more than appear to be reaping the full fruits of savage life from individuals who otherwise pass as educated men and women. Their real crisis is moral education and not the education of the minds or intellect.

The government must see that moral education is back in the educational system and to effect this purpose, it should make use of all the moral agencies at its disposal, namely, the church and other various religious and moral bodies. If and where possible, schools particularly secondary schools should go back to their former owners (voluntary agencies, former co-partners with the government). If possible, too, Caine-culture should be reintroduced in elementary and secondary schools. The point, however, is for the government to see that as a policy, moral edudcation is an integral part of the educational system. This is how it has worked in other countries. It is how it must work in this country.

We also emphasize the fact that the Nigerian government, the nation as

a whole, must return to the wisdom of the ancient philosophers, Socrates and Plato, for instance, who gave priority to moral education or moral life in their estimation of worth of life or the individual. The articulated concern of Socrates (and others) is not just for life, its quality but a good moral life. "The problem is not to live but to live well", he often said. St. Augustine was even clearer in his comments "to live rightly and honourably". The individual, educated or not, must not separate morality from life or education. Existentially the individual must be morally good. In the same vein, too, and in the context of the Nigerian experience of general loss of moral sense among youths, students and all, particularly since the end of the civil war, (which incidentally coincided with the government take over of schools and decline of moral education) the nation must likewise return to the wisdom of the ancients, the Christian founders of practically all the secondary schools and universities in the nation. Their key note for learning and progress is primarily sound morality as easily verifiable from their coat of arms or mottoes. Our own prestigious university, the number one full-fledged indigenous university, the University of Nigeria, Nsukka, for example, advertizes a phrase pregnant with a high degree of moral sense and responsibility, namely, "to restore the dignity of man". "Morals maketh a man", that is to say, sense of self-respect, self-pride, justice, right and wrong, etc. The University of Ibadan bears as its motto, Fons recta Sapere "Fount to relish right things") or things morally right and fitting; University of Lagos has "In Deed and In Trust", for truly deeds speak louder than words. Fr. Ede's OSSISATECH has "academic and moral excellence in Education" as her motto, a pointer once more to the fact that education without morality is savagery.

Even many of our really famous pre-war secondary schools were as famous in morality, self-discipline, good manners, etc as in their academic and ex-curricular achievements, all in keeping with their founders' religious philosophies. Nnamdi Azikiwe University starts off her own motto with "Discipline". It fully reads "Discipline, Self-reliance, Excellence" C.K.C. (Christ the King College) floats "Benitas, Disciplina et Scientia" (Goodness, Discipline and lastly Knowledge). For goodness comes before everything else. These colleges maintained "goodness" to the latter particularly before the Nigerian civil war. Naturally the Catholic Minor Seminary at Onitsha "All Hallow Seminary", modelled on Christ, the most paradigmatic moral teacher, has "Christus, VIA Veritas et Vita" (Christ, the Way, the Truth and Life") as her motto.

In short what it does mean is that the nation must return to the wisdom

of the ancients and return morality to the educational system and in schools for education to achieve its true purpose in this country as in other nations, namely, the co-advancement of learning (intellect) and morality (the will), that is to say, the production of well-integrated and learned individuals.

Lastly we advance as a matter of urgency, too, that the Nigerian intellectuals particularly the nation's educators of all cadres from all the teaching ranks in the polytechnics and other tertiary institutions, teaching professions. For them as for the nation, education without morality is a disaster since sound intellect or knowledge without morality makes, in Plato's phrase, "the most savage of beasts".

We can only conclude that in those academic institutions where such evils as sex-for-grade culture, academic victimization of students and colleagues, exploitation, misuse or manipulation of funds, research or otherwise, abuse of office, witch-hunting, high-handedness, sex-scandal, bribery and corruption in any shape or form, etc. Prevail among academics, the education of those academics is certainly one-dimensional, namely, that of the intellect. The other dimension is necessarily complementary, namely, moral education. The academics, the nation's intellectuals and the professionals, for that matter, must put back this education in their private and public lives, the only way to improve not only public morality (by their inspiring exemplary lives) but truly build a nation, as our current national anthem summarizes it all, "where peace and justice reign", not just, as Oliver Goldsmith put it in his The Deserted Villages, "where wealth accumulates and men decay" (morally). Such should not be the case in Nigeria, certainly not among the intellectuals and professionals.

Notes

1 Chukwudum B. Okolo, Christian Mothers/Families and New Nigeria... (Enugu: Snaap Publishers) P.15.
2 Ibid, p.16
3 Chinua Achebe, The Trouble with Nigeria (Enugu: Fourth Dimension Publishing Co. Ltd. 1993), p. 38.
4 Joseph I. Omoregbe, Ethics for Every Nigerian (Lagos: Shola & Associates, 1991), p.13.
5 Joseph I. Omoregbe, Ibid.
6 Ibid.
7 Ibid. viii (Preface)

8 Weekly Star (15 May 1983) cited by Prof. Chunua Achebe, The Trouble with Nigeria, p.38.
9 Chinua Achebe, The Trouble With Nigeria, p.38
10 Joseph I. Omoregbe, Op. cit. p. 25.
11 Fr. Nicholas N. Obi, This Odd World Spotlighting Nigeria's Blindspots (Lagos: Joe E.N. Jude Prints, 1987), "Foreword" V.

AFRICAN PHILOSOPHY: A CONCEPTUAL-ANALYTIC APPROACH

BY

'MUYIWA FALAIYE Ph.D
DEPARTMENT OF PHILOSOPHY
ONDO STATE UNIVERSITY,
ADO-EKITI.

INTRODUCTION

The question whether there is, or there is not an African philosophy has bothered scholars both within and outside the continent. Those who argue that the African is incapable of evolving a philosophy do so, probably because they believe the African is inferior and lacks a logical and critical mind. David Hume and Levy Bruhl belong to this school. As Hume once explained,

> *I am apt to suspect the Negro to be naturally inferior to the whites. There scarcely was ever a civilized nation of that complexion, nor even an individual eminent either in action or speculation.*[1]

Philosophy to these group of scholars is a strict, theoretical and rigorous discipline. Because Africans are assumed to lack all these, they cannot do or have a philosophy. Scholars like Gene Blocker believe that philosophy is an English word for which an African equivalent cannot be found. Blocker is not alone in this boat. His allies are the "four professors"[2] i.e. Wiredu, Bodunrin, Oruka and Hountondji. The emphasis of these four is on 'analysis and rigour'.

To counter the analytic position and to establish the possibility and desirability of an African philosophy emerged another group of philosophers who believe that African can and indeed, have a philosophy. Notable scholars here include Placide Temples, Alexis Kagame, K.C. Anyanwu, C.S. Momoh, S.B. Oluwole among others. We should not however be seen to be saying that the ideas expressed by all these scholars are identical. It is now history that it was the work of Placide Temples' Bantu philosophy which set the ball rolling on subsequent debates that followed about the existence of African philosophy.

Most of those who argue for African philosophy do so on the premise that the African is different not only in the hue of his skin, but also in his

mind set. The corollary of this, it is argued, is that he cannot have a universalistic view of reality. His view of reality is subject to his environment and culture. The conclusion, therefore, is that his philosophy must be culture bound. Rightly or wrongly, Paulin Hountondji has labelled philosophers of this school, 'ethno-philosophers'.

In this paper, therefore, we have embarked on a reconciliation of two opposing and warring groups. We have attempted to marry culture and analysis with the view to evolving an adequate approach to the study of African philosophy. Our approach we shall call conceptual-analytic philosophy in Africa.

The Core of the Paper

Our first lessons in philosophy were those which taught us the futility of trying to find a definition to capture the entire activity of philosophy. Philosophy has been variously defined as:

(i) The Search for truths
(ii) The Search or love of wisdom
(iii) The Search for the ideal life of wisdom and how to live it
(iv) The rational explanation of nature
(v) The formulation of metaphysical theories
(vi) The analysis of language
(vii) A conceptual response to fundamental problems posed in any given society in any given epoch.

A cursory look at all these definitions will reveal the need for reason, rigour, analysis, society and epoch in the determination of what is or is not philosophy. One might ask, what is rigour, analysis etc, without a society or a world view to reflect about or analyse? African philosophy, the way we perceive it should be the application of rigour, analysis and reason to specific African Waltanshauung.

Conceptual-Analytic Approach

The 'conceptual-anaytic' approach, put simply, is the critical analysis of the folklores, songs, proverbs, wise sayings of the African, and by extension, of any other culture for that matter. It is in the possibility of extending it to all cultures that it anchors its contribution to universal philosophy and in its culture bias, its relevance to Africa.

Analytic philosophy started in the early 20th century and was predominant in the English speaking world. At its inception, analytic philosophy was a revolution because it shook the very foundation of traditional phi-

losophy. There now appears to be different varieties of the analytic school namely, Logical positivism, ordinary Language and logical Atomism. What however unites all analytic philosophers is their agreement on the central task of philosophy. The duty of philosophy, they say, is to clarify and analyse the meaning of language. Wittgenstein encapsules the analytic position in the following words,

> *The object of philosophy is the logical clarification of thought... the result of philosophy is not a number of philosophical proportions but to make propositions clear.*[3]

This position presupposes that, in contrast to the immediately past tradition of 19th century idealism, especially Hegelianism whose practitioners engaged in constructing complete systems of thought regarding the whole universe, the analyst would now undertake the more modest task of working on individual problems. Not only would these problems be simple and manageable, they would all fit into a single class.

It is pertinent to note from the onset that we do not intend to take 'analytic' the way it was understood in the early 20th century. This is because, philosophy, the way the analysts view it, is a closed circle. They neglect the ideas that do not appeal to them branding them as 'mere speculations'. But we should note that philosophy itself started with speculations in the Pre-Socratic era. 'Speculation' in its true meaning is a synonym for vision, for the intellectual and imaginative, 'seeing' of things whole and clear.[4] It is indeed speculation that charactarizes mostly the African metaphysical system. While the philosophers in the analytic school portray philosophy as the analysis of language, in our conceptual-analytic approach to African philosophy, we intend the analysis to be of the world view of the African. We realise early enough that the problem of the 'ethno-philosophers' is often derailing by glorifying and eulogising culture as philosophy. Culture, as we know it, is not and cannot be philosophy otherwise they will not have separate identities. But the African metaphysical system is to be found no where but in their cultures, myths, proverbs, folklores and wise sayings.

In the 1930's, Ruth Benedict discussed culture as "a pattern of thinking and doing that runs through the activities of a people and distinguishes them from all other people."[5] This is principally why we believe that the Africans can have a philosophy that is distinct and peculiar to them. The beauty of this is that it can also be done in other cultures. What we believe is required and which the works of ethno-philosophers lack is logical analysis, which requires patience, insight and concentrated attention to details.

The problem of the analytic school in the 20th century, which we do not want our own approach to imbibe is the destruction of a system as G.E. Moore did without constructing another to replace it. G.E. Moore constructs arguments to refute the idealist main thesis, 'Esse es percipii', but failed to replace the thesis with another, free from the same problem. So, for instance, if Alexis Kagame's African conception of Time is condemned via critical analysis, another modified theory, not necessarily from the same philosopher should replace it. It is in this manner that our ethno-analytic approach should be understood.

There is no gainsaying that we agree with the entire gamut of C.S. Momoh's argument that African proverbs constitute one important and strategic area where African philosophy can be extracted.[6] In many of the African proverbs - ethics, metaphysics, epistemology and even logic can be found. It should be clear that we are not suggesting that the first order products in the sense of taking them as laid down from generation should be accepted as authentic African philosophy, since we do not wish to glorify the past unjustly. What we are suggesting is that such proverbs, myths, folklores etc. with such concepts as 'ori', 'Eniyan', 'Imo', 'Igba', 'Chi' etc. should be analysed critically with the view to solving such perennial philosophical problems as determinism, freedom, mind-body relationship, knowledge-belief dichotomy etc. It is only in this way that such concepts as 'ori' as has been handed down to us from our fore-fathers can become bonafide philosophies.

The Yoruba Experience

We must emphasize once again that this approach is meant to integrate and synthesize culture with philosophical analysis. It is a method whereby the culture and communal consensus are given an individual logical and critical reflection. In essence, we agree with P.O. Bodunrin that at the end of the day, philosophy should be an individual discipline. We agree because there is a need for individuals to call the bluff of group or societal dogmas. There is no doubt, dogmas cannot be philosophies. Individual disciplines invite all men to dissociate themselves from the emotional appeal and commitment given to culture thereby making it unphilosophical.

The purpose of individual approach is to search for objectivity, but such objectivity should not be preserved from the circumstances and milieu of the thinker and his culture. Logic and mathematics are important tools for analytic philosophers, they teach us how to study the world but give no actual information. It then becomes imperative to blend culture with the

tools of the analytic philosopher in order to get information about the world. Culture will help give content to the empty abstract symbols or give life to the lifeless concepts.

Many philosophers have fallen into the error of over rating the importance of logic and mathematics by assuming that, it is only these that offer true knowledge of reality. The African Neo-logical positivists are particularly guilty of this. We shall not saddle ourselves with meta-philosophy as the African Neo-logical positivists did but we shall go ahead to examine concrete issues in African world view with a view to subjecting them to analysis and rigour.

We want to be concerned with issues such as witchcraft, 'ori', 'igba' , 'okan' etc. so that we can analyse them in order to help yield a clearer understanding of the world. It is not only that which can be verified that can give us knowledge. Knowledge can be derived through, for example, our culture of 'Ifa' divination. Pure analysis cannot give us true knowledge of reality, but when blended with culture, we can get nearer the truth about reality.

In the Yoruba search for what makes up a man, implicit in man, he discovers the following, 'Ara', 'Ojiji', 'Emi', 'Okan', Ara is the physical body which man shares with the lower creatures. With Ara, man acts and reacts to his physical environment. It is the Ara which serves as the 'house' for other constituent parts. When man dies, it is the Ara that is buried and allowed to decay. Ojiji is the human shadow. The shadow to the Yoruba, like the physical body, is visible. During man's life time, the shadow accompanies him everywhere. Though the shadow is visible, it is taken to represent a higher phenomenon which is unseen. In other words, the shadow is the visible representation of the invisible human essence, or personality-soul. That is why when the personality-soul disappears at death, the shadow ceases to exist, it vanishes with the soul. The third constituent part is Okan. This literally translates as the 'heart' or the physical 'heart'. But this material Okan is a representation of another Okan which is essentially immateial and invisible. In this sense, Okan is 'the seat of intelligence, thought and action'. It can also be used to denote that part of man called 'iye' or mind, mentality or rationality. This is seen clearly in the ways Okan is used by the Yoruba:

Okan re tilo - 'He is buried in thought'
O se okan giri - 'He is brave'
O lokan - 'He is brave'

The fourth constituent is the Emi. This is the vital principle, the seat of life. It is closely associated with breathing or breath - emi but certainly not identical to it. At death, when man ceases to breathe, it means that his emi has gone. Emi is also associated with the personality - soul, that is why it is when the personality - soul disappears from man that he ceases to breathe. Moreover, emi can be used to denote 'spirit' or 'being'.

Finally, we have the real essence of being, the personality soul, which guides and helps a person before he is born, at birth through the passages of life, at death and it finally goes back to the Supreme deity, its creator to give account of his conduct on earth. This personality soul is called 'Ori' by the Yoruba.

The above illustration represents the Yoruba belief on what constitutes man. This has been given straight from its cultural setting without any second order reflective activity. This is perhaps what the ethno-philosophers would do. Temples, for instance, mainly put forward the Bantu world view without the philosophical rigour of second order. But our approach is to add rigour and analysis to these belief culminating in the reduction of the five constituent parts of man, in Yoruba belief to two. This will reveal that contrary to the Yoruba communal belief, there are only two constituent parts to a man namely, body and soul or mind.

That which is called Ojiji, shadow, Okan - heart, Emi - Spirit and Ori, on analysis are one and the same thing. We shall illustrate further. The Yoruba believes that when a man dies mysteriously or is killed by another, the Ojiji which is the shadow of that person; will haunt whoever is responsible for his death. This is not possible if we take the Ojiji as a physical thing because if this be the case, then the Ojiji ought to perish with the man at death. But the Yoruba also believe that the ojiji is just a physical representation of an invisible human essence. But we may ask, what then is that invisible human essence?

We shall consider Okan. The Okan is said to be both physical and immaterial. The physical Okan as we know it will perish with the Ara - body, but that which is immaterial cannot perish. So the immaterial Okan is nothing other than the Ojiji - the invisible human essence.

Okan - 'He is brave' is not referring to the physical okan but to the essence of man, his rationality. Similarly, the ojiji can be equated with the immaterial Okan. The Emi therefore is not different from either the Okan or Ojiji. The Emi is regarded as the 'spirit' or 'being' of man. What is the 'being' of man if not his essence and rationality? There are even cases when a person is said to die of guilty conscience - 'Eri okan lo pa'.

So the Okan, Emi, 0jiji in their material nature are seen here to be the same and perform the same function.

The ojiji is meant to be a physical representation of the personality - soul which is the material essence of man. This is what the Yorubas call 'Ori'. We can deduce, therefore, that it is this Ori, which is the personality - soul which manifests itself in the other three constituent parts of man as the ojiji, Okan and Emi. This is the way we expect our ethno analytic method to work. With the analysis and rigour we have infused into the Yoruba conception of person, we can now better appreciate Descartes' initial problem of accounting for the interaction of mind, which is immaterial and body which is material. This is related to the problem of locating the position of the mind.

The human mind or soul is nothing but the Ori manifesting itself in different forms. Descartes was perhaps confused by this phenomenon in his thinking that the mind is located in the pineal gland in the brain. Our contention is that Descartes inadvertently assumes that since the brain is responsible for the interpretations of sensations through the nerves, then the mind must be located therein. But our analysis of the Yoruba conception of the person reveals that it is actually the Okan that is the seat of thought and intelligence. It is from this Okan or mind that good or bad thoughts proceed, the Yorubas contend.

With this analysis, the Yorubas have unconsciously addressed the metaphysical problem of mind and body. We have, however, helped them make it a conscious and reasoned Yoruba contribution to the on-going debate on the mind-body relationship. We have been able to show that the concept of Ori in Yoruba metaphysical system is that which manifests itself in various forms - in Ojiji - shadow, Okan - heart, Emi - spirit. The interaction of the mind and body can therefore be said to take place when the personality - soul - '0ri' mainfests itself in the different parts of the body. It is that which acts as the Emi - spirit or conscience that avenges death. It is that which will stand as the Ojiji to account on the judgment day for our deeds on earth.

Conclusion

We have been able to shed more light and clarify some puzzles that characterize the age - long problem of mind and body. We have done this within the Yoruba cultural context. The analysis infused qualifies the Yoruba concept of person as philosophical, at least from the perspective of the West. It is not the case of putting down verbatim what the Yorubas

think make up a person, but an individual critical reflection has been added to it. The aim of our approach is not only meant to justify and show how culture or communal consensus can be philosophy, it is also an attempt at perhaps, solving some of the perennial problems of philosophy.

We conclude by strongly alluding to the position that philosophy cannot, but share from the patrimony of the cultural context from which it emerges. To this extent, African philosophy cannot be denied, it exists. Africans are only responding now to their spatio-temporal context. No doubt, 'philosophy is the child of its circumstance; so, philosophers emerge out from the bossom of their society."[7]

NOTE AND REFERENCES

1 D. Hume; "Essay on National Characters" in Essays (Routledge and Kegan Paul. London 1956) pp. 152 - 153.

2 The 'Four Professors' - Wiredu, Oruka, Hountondji and Bodunrin have been referred to by Dr. C.S. Momoh as African Neological positivist. Bodunrin himself admits that the four meet together more than any other group of philosophers on the continent.

3 L. Wittgenstein (cf) S.E. Stumpf: Elements of Philosophy: An Introduction (Macgraw Hill Books, Singapore, 1987) p. 451.

4 K.C. Anyanwu; The Atomistic and Holistic Philosophers (Heartland Publishers California) p.13.

5 R. Benedict (ed); Encyclopedia Americana (New York Kruger Press 1970) vol. 6 p. 380.

6 C.S. Momoh (ed); The Substance of African Philosophy (African Philosophy Project. Auchi 1989) pp. 67 -69.

7 T.U. Nwala; "Philosophy and its Relevance to Society" in The Nigerian Journal of Philosophy vol. 1 No. 1 1988. p.7.

SCIENCE AND TECHNOLOGY AS PROMISES AND THREATS TO SOCIETIES

BY

AYO FADAHUNSI
DEPARTMENT OF PHILOSOPHY
FACULTY OF ARTS
OGUN STATE UNIVERSITY
AGO-IWOYE

1.1 Introduction

The various fields of culture do not develop at a constant rate. At intervals, attention is chiefly directed toward one or more of these areas, only to yield, in time, to other interests. To be sure, historical development is continuous in the sense that a sphere of culture is seldom, if ever, ignored completely, yet pronounced shifts in the foci of interest do deserve to quicken or to retard its growth.

Thus, without reducing cultural eras to a ready formula, it may be ventured that in the Periclean Age, philosophy and art attracted most widespread attention. The primary focus of interest for the greater part of the Middle Ages was religious and theological. Marked attention to literature, ethics and art generally characterised the Renaiscence. Whereas in modern times, especially during the last three centuries, the center of interest seems to have shifted to science and technology.

But what are the reasons for such shifts of emphasis? Obviously the internal history of each of the fields of culture to some extent furnishes us with an explanation. Yet it is at least plausible that other social, economic and cultural conditions have also played their part. And this raises at once a series of fundamental questions. Are science and technology for development alone? Which elements of humanism are involved in the processes of attaining scientific and technological advancement? In other words, does this scientific and technological progress have respect for human value and purposes? .If the vogue as it is now is the cry for science and technology , then for what? Is it for development or destruction i.e. what are the limitations of science and technology? Thus the consideration of the last question is the centre point of this paper i.e. the promises and threats of science and technology - The positive implica-

tions of the growth of science and technology are the 'promises' while the threats are the limitations. But in an attempt to answer this question, answers are provided for the other questions too.

2. Definitions

"Science is, first of all, a human activity. It was not 'discovered' by man, but was invented by him in an effort to understand nature and himself".[1] What distinguishes science from other human activities is that it enables man to see the world "as it really is".[2] This may mean different things to different men at different times. Science, in its widest sense "is a systematic method of describing and controlling the material world".[3] This is an activity which we find chronicled in those writings of the Egyptians and Babylonians that we call 'scientific', and it is the principal function of science today. According to F.S. Taylor, "science can be understood in two ways. It can be seen as it stands at any moment, a logical coherent account of that order which the scientist of the time finds in nature; and the man who wishes to use science or to add to it can, in fact, get on very well without knowing its history, as we can see demonstrated in the persons of many scientists who are eminent in their subject, but little acquainted with its past".[4] But science is not merely a coherent system, here and now; it is also something that has grown and is growing, and that, as it grows, progressively affects man's life, Taylor further argued.[5] Many persons in our own day view the extended investigations of science as comprising an activity natural to man; hence, as neither requiring nor being susceptible to future analysis.[6]

Technology, on the other hand, has been variously defined but not with precision. In its simplest terms, according to D. P. Lauda and R.D. Ryan "technology is man's efforts to cope with his physical environment - both that provided by nature and that created by man's own technological deeds, such as cities - and his attempts to subdue or control that environment by means of his imagination and ingenuity in the use of available resources".[7] In the popular mind, technology is synonymous with machines of various sorts - the steam engine, the locomotive, and the automobile - as well as such developments as printing, photography, radio, and television. "Sometimes technology is defined as applied science".[8] Science itself is viewed as an attempt by man to understand the physical world; technology is the attempt by man to control the physical world. This distinction according to Lauda and Ryan may be briefly put as "the

difference between the 'know-why' and the 'know-how'.[9] But technology for much of its history had little relation with science, for men could and did make machines and devices without understanding why they worked or why they turned out as they did.

Technology is often identified with the hardware of production - knowledge about machines and process. Here a much broader definition is adopted, extending to all the 'skills, knowledge and procedures for making, using and doing useful things'.[10]. Technology thus includes methods used in non-marketed activities as well as marketed ones. It includes the nature and specification of what is produced - the product design - as well as how it is produced. It encompasses managerial and marketing techiques as well as techniques directly involved in production. Technology extends to services - administration, education, banking and law, for example - as well as to manufacturing and agriculture. A complete description of the technology in use in a country would include the organisation of productive units in terms of scale and ownership.

Technology consists of a series of techniques. The technology available to a particular country is all those techniques it knows about (or may with not too much difficulty obtain knowledge about) and could acquire, while the technology in use is that subset of techniques it has acquired.

3. Promises and Threats

> *Science and Technology like knowledge is not only the object of a human intellectual quest. Knowledge is also power. It is power to create and destroy, power loaded with promises and threats.*[11]

The promise of science and technology is overwhemingly evident to modern societies. Science and technology are achievements of human creativity. Humanity develops them to achieve human purposes. Christians regard them as an expression of God's gift of creativity and responsibility which humanity exercises before God and in relation to the created world.

Science through its contribution to understanding liberates people from many forms of ignorance and superstition. Technology liberates them from many physical constraints and insecurities. Medical technology has removed the terror of many disease and epidemic.Agricultural technologies increase the production of food ; when related to adequate social structures, such technologies can remove the age-old threat of famine. Ma-

chines can liberate people from many types of drudgery. They make possible communication, travel, leisure, access to the arts. Civilization is possible only with a technological base; the kind of civilization that most people today desire is possible only on a very elaborate technological base.

It is therefore no wonder that most people in most societies crave for science and technology. The developing nations seek technology to lift the burden of poverty. One of their just grievances against the industrial world is that the latter has kept monopolies of many advanced technologies or has allowed access to them only on terms that favoured the technologically advanced societies. Meanwhile, the industrialised nations seek ever more intricate technologies. The wealthiest and most powerful societies push ahead with business and industrial technologies of automation; with medical experimentation in transplantation of organs, new cures for old diseases, discoveries in genetics that promise to overcome hereditary ailments with the use of earth satellites to discover new information and transmit words and pictures around the world. Almost as soon as a problem is defined, a R & D (research and development) project is launched to work toward a solution.

Yet in the face of all these promises, science and technology appear to many people as threats. We must ask why this is so and how persons and societies can meet the threats and realize the promises. A look at the contemporary world shows several reasons for the threat.

First, the power of science and technology is available for many purposes, good and bad. In human experience, power is often the power of some people, some classes, some nations to dominate others. In many societies, the first experience of advanced technologies has been the experience of a military technology of a foreign conqueror or the economic power of a foreign exploiter. For that reason, the developing societies, which have the most reason to want new technologies for their promise, also have the most bitter experiences of the threat of technology. They know well that science and technology, which can be liberating powers, are often oppressive powers. The power of humanity over nature, which is a sign of the human "dominion", quickly becomes the power of some people to control others.

Furthermore, there is a strong tendency in social structures to acquire technologies in ways that accentuate inequality. One reason is that new technologies build upon preceeding technologies; those who have the most technology are in the best situation to acquire still more. Another related reason is that complex technological innovations, even if they are the means

to economic gain, are costly to get started. So those with the most wealth can buy or develop the most advance technologies. So while the poor struggle painfully to catch up, the rich and powerful are leaping farther ahead.

Even if science and technology are considered to be "value-free" (a frequent and erroneous assumption), they operate within social structures that embody values and organize power. So their use serves the purpose of those with the power to pay for them. Perhaps even more ominous is the fact that much of the direction of research and development (R & D) is determined by the structures of power and society. Even the most idealistic researchers are likely to find themselves divising and working on projects that can be funded. The sources of massive funds are corporations and governments. Corporations spend huge sums on research and development to develop new products, then spend more money on research and development to persuade people to buy the new products. They spend very little on research on the social consequences on the value-implications of the new products. Governments are less likely to sponsor research and development for profit. But they direct research and development to goals determined by the government officials, who may or may not represent the real needs and values of the society. Often they merely replace the corporations goal of profit with the goal of national advantage.

Military technologies are a special case in point. The pacifist, Albert Einstein, went through a real struggle of conscience in deciding to alert President Roosevelt of the possibility of building an atomic bomb. What followed was one of the most portentous research and development projects of all history. Einstein later found himself helpless to prevent the use of the atomic bomb. Many a scientist who worked on the project has done profound soul-searching about the meaning of that work. Some of the scientists have engaged in ethical crusades connected with nuclear weapons and the uses of nuclear energy. One of them, Robert Oppenheimer, said on November 25, 1947: "... the physics have known sin, and this is a knowledge which they cannot lose".[12]

. The increased awareness of the consequences of scientific power and the evidence of its misuse have brought about a change in public moods. when the world council of churches sponsored a consultation on the Ideological and Theological Debate about Science, one finding was:

> *It is surely one of the most striking features of our own time that science and technology have come under sharp*

attack, both in the Western and the Third Worlds. There has been a shift in science's own self-image, and the authority of the scientist with the general public no longer goes unchallenged.[13]

Christians, who regard science and technology as part of the divine gift of human creativity, have reason not to join the forces that want to demonize either science or technology. But they have equal reason to show concern for the social structures that so often turn the promise of science into threat.

Second, it is not only destructive human purposes that turn science and technology from promise to threat. Even well-intended uses of technology have unintended consequences that perplex or frustrate the people who initiated them.

There are many kinds of examples of such unintended effects:

(i) Technology affects the natural environment. Mainly an effort to increase human power in the natural order has ended in destructiveness to nature and, in turn, to human life. Poor people, seeking food and firewood, have not intentionally produced dangerous soil erosion, but the effect has been disastrous. Households and factories may not intend to pollute the air, but the outcome is as bad as if it were intended. Manufacturers of aerosol cans did not intend to endanger people by depleting the protective ozone in the upper atmosphere, but the unintended happened. Sometimes, of course, greed blinds people to the effects of their actions. But innocent ignorance is also blind.

(ii) Technology affects social structures. Massive technologies have led to the re-ordering of cities and nations, both in their visible physical organisation and in their functioning. The automobile, to take a single pervasive example, has influenced human life - including work habits, recreation, housing patterns, sexual practices, the saving and destruction of human lives - in ways far beyond the reckoning of its first builders. Machines, intended to liberate people from poverty, make them dependent on vast networks of mechanical services and energy supplies. Factories organize people in relation to the efficiency of machines and often install drudgeries worse than the drudgery machines were designed to overcome.

(iii) Technological efforts sometimes develop a momentum that is hard to resist, even when it needs human restraint. Large-scale technology means

big investments and organisations. Many people come to have a stake in the success of the enterprise. Government officials, industrial managers, researchers and labour unions may maintain the momentum of dubious or harmful projects. Today many people suspect that this is what has happened in cases of weapons, supersonic transport planes and reliance on nuclear energy.

(iv) Technology affects even human self-understanding. When people complain that they are merely "cogs in a machine", they show how organized technological production has affected their self-image and even the language they use. Technology originates as a means to human ends. Its unintended effect is often to make people means to the success of specific technologies.

Because of these unintended effects of technology, people sometimes experience it as a fate, even a demonic force, beyond their control. Others reply that technology is a human creation, that it has no will of its own, that people direct it, that the experience of it as fate is illusory. But even if this experience is illusory, it is a powerful experience for some. It points to the necessity of conscious, thoughtful, resolute efforts to subordinate technology to human purposes and to examine those human purposes in the light of the highest human faith.

Third, special issues arise in the transfer of technologies from one society to another. Such transfers are often highly desirable. They can be a means of overcoming great disparities of power and the injustices they mean. Part of the world's technological problem is that too many owners (government and corporations) regard their technologies as possessions, to be sold only for their own advantage and not to be shared at all with potential competitors. Countries acquiring new technologies sometimes complain, with reasons, that other countries sell only their obsolete or hazardous technologies, retaining the secrets of their best ones. There is an ethical case to be made for increased transfer of technologies.

But again threats accompany the promise. The transfer of technology is never the transfer of technology alone. A technology brings with it something of the culture that produced it. A society adopting a foreign technology adopts something of the foreign culture. To introduce into any society the automobile and airplane, motion pictures, radio and television, even soft-drink bottling factory is to modify traditional habits, sometimes in unexpected ways.

Since culture is never static, the changes accompanying new technologies may bring genuine benefits. But technology also frequently becomes

an agent of cultural disintegration, not only deliberately but also inadvertently.

Hence the transfer of technologies put an ethical responsibility on all parties to the agreement. A society transferring a technology has a responsibility to offer not simply the devices it no longer wants on those it can sell at a profit, but the devices that the other society really wants. The society acquiring a technology has a responsibility to think through its consequences and to make the judgment as to whether it will really enhance life for all people in the society.

Any healthy transfer of technology is difficult when there are disparities of power between parties to the contract - as usually there are. Hence this issue raises major questions about the nature of the world's economics and the relations between them.

Fourth, the success of science and technology in solving certain problems has led to unreal expectations. Popular hopes frequently assign to technology a messianic role in the conquest of human problems. People then may be unprepared when technology fails to solve some problems and produces others. There is a need to distinguish what science and technology can and cannot do.

For example, technology has increased economic production and consumption beyond all expectations of past centuries. This achievement has led many to hope that it would eliminate poverty and bring widespread happiness. But human misery, degradation, despair and starvation persist. By this time, it is evident that no quantitative increase in production solve the problems of poverty without attention to basic moral concerns for justice. It is also evident, in the face of overwhelming alienation and disaffection among affluent people, that extravagant consumption is no assurance of happiness.

A few years ago, two scientists,[14] Herbert Weiener and H.F. York, took a look at the problem of international competition in nuclear weapons. They concluded that the chief rivals sought security by trying to build armaments that would overwhelm enemies. The result was the contradictory system of increasing armaments and decreasing security. Weisner and York commented that "there was no technical solution to the problem".[15] Their insight has been broadened by other writers, so that today one may read in many places that there are many problems with no technical solutions. That is, there are problems for which the only solution is a reorientation of human purposes, values and ethical practices. What is new is the increasing insistence from centres within the scientific estab-

lishment that no technical solutions can take the place of ethical concern and action.

To believe this is not to disdain the contribution of technology. The meeting of many human problems has both a technical and non-technical aspect. For example, technologies of good production, preservation and distribution are an essential part of the answer to human hunger. But by this time there is overwhelming evidence that increased production will not solve the problem apart from attention to human greed and social-economic organisation. Technologies of contraception can contribute to meeting the population explosion. But they will not solve the problem without changes in human desires and social institutions.

To take the most important example of all, technology, can contribute to human fulfilment. Think what writing and printing have meant for the expression and sharing of achievements of the human mind and imagination. But technology cannot tell what "life more abundant" is, nor can it produce such a society apart from human insight and commitment.

4. Opportunities and problems of participation

From most parts of the world today, there comes a cry of people who want to participate in making decisions and exercising the power that affect them. The cry comes from individuals and from groups: from racial and ethnic groups long kept out of power, from women in male-dominated societies, from youth, from the aged, from labour unions, from the poor. In the international arena, it comes from nations which feel dominated by great powers or "super powers".

Long ago, Plato and Aristotle could argue that people were born into a hierarchy and that only a few were fit to govern.[16] The world will no longer buy that. Plato and Aristotle could add to their argument of a natural hierarchy an additional fact. Only people with considerable leisure - not slaves or labourers - could spend their time discusing public issues in the market place and come to informed opinions about important policies. That argument always had its flaws: the slaves and labourers knew some-things about the society that the wealthy did not know. Today the argument is more fallacious than ever. It is not slaves and labourers who have mismanaged affairs on the grand scale.

Technology brings some advantages for informed participation decision-making. Technologically, advanced societies are, for the most part, literate societies. The press, radio and television given to many access to information once available in many societies, and public opinion polls

report almost daily on the trends of public opinion.

Yet an immense number of people in all kinds of societies do not participate in many social decisions and often do not even know how they are made. They feel alienated from the centres of power. Obviously something has gone wrong. What is it? There is no single cause. But here our concern is to look for the relevance of science and technology to this situation.

On one hand, large-scale technologies may bring desired products and services to people at the cost of dependence on giant organisations that are remote from the people, hard to influence and governed by other interests than the service of the people. In many kinds of society, people complain about the inertia of bureaucracies. In technologically-advanced societies, most people can tell stories about arguments with computers. Large industries - sometimes - produce goods that are cheaper and more efficient than cottage industries can turn out, but most people have seen machines that are idle because of the lack of a spare part that must come from a distance, perhaps from another nation.

In some other cases, trade-offs are involved. An individual might prefer some dependence upon a distant automobile manufacturer to the independence of doing it alone. The trade-off might mean a net gain in mobility, power and freedom. There are advantages, both ethical and practical, in interdependence. But some get crushed and some get lost in massive systems, and vast numbers feel alienated and dehumanized.

On the other hand, science and technology depend upon a technical and managerial elite. Societies come to depend upon "the priest of machine"[17] who can manipulate the mysteries beyond the comprehension of ordinary mortals. People without sufficient technical knowledge cannot make informed decisions to technical issues. Yet they are not convinced that the experts can either, and they do not want to deliver over to experts the decisions that may help or destroy themselves. Was there ever an era so dependent upon, and so distrustful of, experts as ours?

Contemporary scientific technology shows two especially conspicuous examples of the issue. The first is nuclear energy. Here is a technology that may provide energy to compensate for the dwindling supplies of fossil fuels. Already some societies are using it extensively, and more are seeking it. The harzards connected with its accidents, diverting of nuclear materials to weapons, sabotage, transportation and disposal of wastes - are real. Accepting risks is part of the venture of human life, but not all risks are ethically justifiable. Controversies rage about the risks. The citi-

zen is not entirely sure how far the arguments among experts reflect differing scientific opinions and how far they reflect differences in values and political judgements.

In 1977, the World Council of Churches, through its sub on church and society, made a presentation to the International Atomic Energy Agency.[18] Some people wondered: why should this United Nations agency, dealing with so technical a subject, give time to the World Council of Churches? The reason was a recognition that "public acceptability", which means in part ethical acceptability, is an important element in decisions about nuclear energy. The World Council of Churches, in developing its statement, involved some of the world's foremost physical scientists (including both pro-and anti-nuclear physicists). Its statement included its own best assessment of some highly technical questions about advantages of various sources of energy, about comparative risks of different systems, and about human needs in relation to resources. But it put its major accent on the two ethical issues of justice in access to energy and the legitimate concern of the public in decision-making.

The second example is genetic experimentation. The most prominent issue in this vast field is currently the argument over recombinant DNA ("gene splicing").[19] This new technique may give the means for preventing diseases that have haunted human history. It represents a giant leap in both science and technology. But some scientists warn that it may unleash new diseases for which human beings have no immunity and no remedies. So serious is the scientific concern that geneticists recently agreed to observe a prolonged self-enforced international moratorium on such experimentation, while they drew up guidelines for further work. The normal governments, national and local, in the overseas countries are legislating on the issue. The normal government policy-maker or citizen does not know much about the issue, let alone have a basis for sound decisions, apart from information that comes from scientists. Yet people, who may be helped or hurt by the experimentation, do not want to turn over decisions to an expert elite, who in their enthusiasm for research may have different values from the public at large.

Many other developments in genetics present important ethical issues. Should genetic science try to prevent the birth of abnormal people? Should science try to increase the intelligence of people by new genetic techniques? What is it to be normal, to be human? Great scientific-technological endeavours centre on such issues, but science and technology will not themselves answer the questions.

Scientists have long fought, sometimes against superstition and tyrannical restraints, for freedom of inquiry and experimentation. Society, including religious and political institutions, often has restraint. But society has a legitimate concern for the effects of research. This is most obvious in the case of applied technology. For example, many societies have decided (at least in their public instance) that research-directed-warfare is unethical. But even pure research has ethical limitations. There are widespread constraints upon experimentation on people without their "informed consent". And now even experimentation on bacteria is restricted for the sake of public safety.

5. Conclusion

The advances of science and technology make urgent the question of decision-making that affects the public good. In concluding this essay therefore, I want to assert as follow: There is a role for scientists and technologists in shaping public policy. They cannot simply assert that their activity is value-free and that they have no responsibility for the use made of their achievements. But, on the other hand, they cannot become moral arbiters for society. As the Cambridge consultation (mentioned earlier in this paper) put it: The relationship between science and war, science and the control of behaviour, technology and the ecological crisis, among others, are facts which every scientist should take into consideration. Responsible scientific work thus demands a rigorous analysis of the socio-political and economic framework of the scientific enterprise. Although science is incompetent to determine values or ends, it can provide an objective clarification as to the means to be used or as to the ends which are actually achieved.

As part of the public, scientist have a responsibility to alert society with candour to the ethical significance of their actions, so far as they can discern them. But then there is a role for the whole public. No matter how able the expert, the people affected by decisions have a moral right to participate in the making of such decisions.

BIBLIOGRAPHICAL REFERENCES

1. David Alman, Conquest (London: George G. Harrap & Co. Ltd., 1963) p.1.
2. Ibid., p.1.
3. Taylor, Sherwood F., Science, Past and Present (London Heinemann, 1962), p.2.
4. Ibid., p.3.

5. Ibid., p.3.
6. Merton, Robert K., Science, Technology and Society in Seventeenth Century England (New Jersey: Humanities Press; Sussex: Harvester Press, 1970), p. xxxi.
7. Lauda, D.P. & Ryan, R.D., Advancing Technology (Iowa: W.M.C. Brown Company Publishers, 1971), p. 53.
8. Ibid., p.54.
9. Ibid., p.54.
10. Merrill, R.S., Contribution in D.L. Sills (ed.), Encyclopedia in Social Sciences (Macmillan, 1968).
11. Paul Abrecht (ed.) Faith Science and the Future (Philadelphia: Fortress Press, 1979), p.22.
12. Oppenheimer, J. Robert., The Open Mind. (New York: Simon & Schuster, 1955).
13. See the report on "The Ideological and Theological Debate about Science" which took place at Cambridge, United Kingdom, from June 20 - 26, 1977.
14. CF. Paul Abrecht (ed.) Op. cit., p. 26.
15. Ibid., p. 27.
16. Plato.
17. Spengler, Oswald., Man and Techniques (New York: Alfred A. Knopf., 1932).
18. See the report of the International Atomic Engergy Agency's Conference on "Nuclear Power and its fuel Cycle", Salzurb, Austria, May 2 - 13, 1977.
19. Paul Abrecht (ed.), Op. cit., p.29.

GROUNDS FOR KNOWLEDGE: ON THE INSUFFICIENCY THESIS

By

Z. B. Ogundare
Philosophy Department
Ondo State University
Ado-Ekiti

INTRODUCTION:

The veracity of Gettier's argument against justified True Belief being knowledge, in his article "Is Justified True Belief Knowledge"[1] has been assailed from several quarters, since the publication of this article. However, many of the arguments advanced against Gettier have not been forceful enough to vitiate the strength of Gettier's argument. Gettier has rejected the claim that knowledge can be defined in terms of belief, truth and evidence because the 'sufficiency' and 'necessity' requirements some scholars advance cannot guarantee the belief status to be knowledge. The tendency has been to refute Gettier by citing counter examples which are common but trivial in the sense that they do not touch the heart of the matter. As a matter of fact, the knowledge - belief distinction rests on a certain number of classical examples. But Gettier would simply not be impressed by such examples. However, I do not agree with Gettier as will be clear in the sequel. I feel the result of Gettier's argument is an emphasis on a fundamental cleavage between knowledge and belief which is too extreme.

My interest in reviving this old debate about the knowledge and belief distinction is consequent upon the fact that the attempts made by some philosophers to refute Gettier's claim as mentioned earlier, are not strong and stimulating enough. Although this is not to say that the objections of Gettier's critics are obsolete and antiquated, yet they have not come out with sufficiently critical illustrations that will show the effectiveness of their denial of Gettier's thesis. This throws the debate open. My attempt in this paper is meant partly to show by practice that philosophical discussions are never exhaustive because solutions to philosophical problems are neither closed nor absolute.

THE PROBLEM

In Edmund Gettier's 'Is Justified True Belief Knowledge?', a critical exposition.of A.J. Ayer's and R. Chsholm's necessary and sufficient conditions for someone's knowing a given proposition, it was argued that a person may have no justification in claiming that he knows a proposition P, given that

(i) P is true
(ii) S believes that P
(iii) S is justified in believing that P[2].

In other words, Gettier's task was to show that 'Justified True Belief' cannot be equated with knowledge because the necessary conditions usually given in the classical definition are not jointly necessary and sufficient for belief to assume the status of knowledge.

In this paper, I shall not be trying to show that Gettier's thesis is false in absolute terms. I shall rather suggest that its appeal is not as forceful as it seems and that sound examples could be given that would show that the 'sufficiency' and 'necessity' requirements do not provide adequate grounds for Gettier's attempted refutations.

Gettier presents us with two counter examples to show that conditions (i) - (iii) are not sufficient for knowledge. As put by Ernest Sosa[3], Gettier's first example is one in which a true 'entailment' is derived from a false proposition. The second is one in which S has good grounds for his belief that P, and from this dèduces that pvq. However, unknown to S, (p) .q. Thus the view that

(i) P is true;
(ii) S believes that P;
(iii) S has evidence that P

would not show adequately that S knows that pvq.

In each of Gettier's counter-examples, a proposition which is in fact true and believed by S to be true on good grounds still fails to qualify S's claim as knowledge claim since the grounds adduced by S for knowing that P are false.

Michael Clark, in his "knowledge and Grounds: A comment on Mr. Gettier's Paper", is also reported to have argued that there are non-deductive as well as deductive grounds and so Gettier's examples are "stronger than they need have been".4 Clark is also believed to have said that granted S's belief that P is consequent upon a reliable and honest friend's report, we do not want to rashly conclude that his friend's unqueried guess enhances S with knowledge. Furthermore, in an attempt to correct Gettier,

Clark argues that if we pursue the matter of grounds, we will reach a point at which such demands will no longer make any sense. Thus to avoid a kind of infinite regress, he considers that we must recongise a cognitive bottomline where it makes no sense to ask for grounds or evidence for a belief.[5]

My impression is that Clark's contention against Gettier does not solve any problem. It can be concedeed to Clark that we need to break the chain of grounds if knowledge is to be meaningfully accounted for, but his reformulation of the conditions of knowledge leaves the central matter of how to conceive of truth in relation to knowledge claims essentially untounched. One of the crucial points in Gettier's whole argument is the point that a false proposition can entail a true one. I would like to illustrate this with Gettier's examples (d) and (e) in his first illustration as follows:

(d) Jones is the man who will get the job, and Jones has ten coins in his pocket.

(e) The man who will get the job has ten coins in his pocket.

Clearly, (e) is an entailment from (d). Gettier sees (d) as false because although Jones has ten coins in his pocket he is not the man who will get the job; he sees (e) as true because Smith has ten coins in his pocket and he will get the job. In this case it can be said that a false proposition entails a true one. This concedes that 'Justified True Belief' can fail to be knowledge and as such the truth of any knowledge claim is relative to time and circumstances.

In a similar vein, T. Sorell in his "The Analysis of Knowing" has attempted to show the futility of equating Justified True Belief to Knowledge, irrespective of revisions or reformulations of the analysis of Justified True Belief.

Broadly speaking, Sorell distinguishes between two types of conservative reformulations of Justified True Belief: (i) conclusive reason analysis and (ii) the defeasibility analysis. The conclusive reason analysis fails, according to Sorell, because it can only work for mathematical knowledge; and as he contends, "the requirement that one's reason guarantee the truth of one's belief makes sense when what is in question is mathematical knowledge...". The defeasibility analysis rests on a 'gap' between the subject's reasons for what he truly believes and the sum-total of his evidence as related to the belief. This analysis is problematic, says Sorell, because "it makes any further evidence that would weaken justification sufficient for taking away knowledge."[6]

My impression is that Sorell's proof, a proof of the impossibility of the

non-equivalence of Justified True Belief to knowledge is not, and cannot be a non-equivalence and conclusive proof of Justified True Belief to knowledge. One can concede to him that there is difference between apriori knowledge and a posteriori truth. However, my contention is that the traditional conception of Justified True Belief against which the venom of his attack is directed is not about mathematical knowledge, but 'general knowledge' as he chooses to distinguish. Thus his proofs against the defensibility of the Justified True Belief's status is at the very best a reinforcement of an already stated proof by Gettier against Justified True Belief and which does not seem to offer us anything new that can destroy or repudiate the viability of Justified True Belief as being equivalent to knowledge.

Nevertheless, I wish to provide an illustration to show that there could be cases where 'Justified True Belief' can pass for knowledge and to comment on what this must mean for our understanding of the nature of knowledge. Suppose that X believes that

(f) Y is not in school today

because X saw Y on his way to Lagos, and he was duly instructed by Y to inform the Head of Department that he would not be in school that day. Assuming that Y later informed X from Lagos on the phone that he is now in Lagos, confirming his safe arrival there. On this ground, X says that he believes with justification that Y is not in school. X then deduces the following from (f), based on the evidence at his disposal about the absence of Y

(g) Y's lecture cannot hold.

However, unknown to X, Y was flown back from Lagos to the school with an urgent message for the Vice Chancellor that same day and thus was able to hold his lecture after seeing the Vice Chancellor. Here, we are permitted to say now both that X does not know that (g) and that it is not the case that X did not have sufficient evidence for (g). However, on the basis of the evidence available to him at the time when he inferred (g), one is inclined to argue that the circumstances of his claim entitled X to the knowledge that (g). It could be suggested that X's knowledge that (g) was circumstantial; his belief was true at a particular time, say t_1 because not until the return of Y, proposition (g) was true. Hence we argue that X knows that (g) up till time t_2. With the arrival of Y, it could again be said that at time t_2, X does not know that (g). This does not mean that X both knows and does not know because there is a time lag between the two knowledge claims being assessed.

Although it is arguable that the propositional sense of knowledge has the features of incorrigibility, infallibility and indubitability, yet at t1, X's belief that (g) was true but was later at t_2, overtaken by events. There is a sense in which a person can argue that the process of knowing is evolutionary and so what people know is in the process of evolution.

Something like the foregoing seems to have informed Karl Popper in his Objective Knowledge where he maintains that knowledge is never static.[7] Some would also say that the 'truth' of what is claimed to be known is relative.[8] Truth may be relativised, considering the time and the circumstances under which a person claims to know something. The example of X in the foregoing helps to bring this point out. It cannot be denied to X that he knows that (f) since he has sufficient evidence for (f) and the evidence was true at t_1. But events and circumstances proved (f) false. Thus, the knowledge of X that (f) was relative - relative to time and circumstances. The lesson to be drawn from this is that because the truth of beliefs cannot be assessed in absolute terms, claims to knowledge too cannot be assessed in absolute terms. The factor of the defeasibility of truth - claims in terms of truth - falsity eventualities should therefore not play as decisive a role as Gettier attributes to eventual falsity conceived in absolute terms, in our understanding of the general nature of knowledge. This may mean that although the criteria for knowledge are the same they apply flexibly with regard to time and circumstances, for example.

At this juncture, an illusion to Prof. Wiredu's conception of truth as opinion and his critics' argument may be apposite to our discussion.

Prof. Wiredu has attempted to refute any distinction between truth and opinion and has concluded that "there is nothing called truth as distinct from opinion"[9]. According to him, the objectivist view of truth as against opinion is that truth is 'timeless' and 'eternal'. The objectivists were led to this conclusion by common-sense experience which has tempted them to hold some opinion as true at a particular time but which was later discovered to be false. For example, the objectivists have made a distinction between opinion and truth from the following observation:

> *at time t_1, it can be raining, but may no longer be true at time t_2 that it is raining as the rain may have stopped by then*[10].

Wiredu disagrees with the objectivists' theory of truth because as he put it, "if truth is categorically different from opinion, then, truth is, as a matter of logical principle, unknowable[11]. Any given claim to truth is merely an opinion advanced from some specific point of view and cat-

egorically different from truth. Hence, knowledge of truth "as distinct from opinion is a self-contradictory notion"[12]. Wiredu's main contention against the objectivists' conception of truth is that truth should be understood as a cognitive claim from some 'point of view', which he identifies with opinion, and on this basis draws the lesson that truth is nothing but an opinion held from some "point of view", nothing but "opinion"[13].

In criticising Wiredu, Prof. J. Omoregbe has argued that "if as Wiredu contends, truth is nothing but opinion, then opinion would loose its distinctive characteristic which it has only if and when it is contrasted with objectivity. This applies to truth (objectivity) and opinion (subjectivity)"[14].

This view of Omoregbe needs some modification. He seems to misconstrue Wiredu whose suggestion is that we cannot possibly separate a person from his opinion[15], such that when it is said that a person has spoken the truth, the truth has come forth from his own subjective thought vehicle. When a person makes a truth claim, we should respect his personal autonomy, and consider him as being entitled to his own opinion as a rational individual.

Prof. Wiredu, in one of his replies to his critics distinguishes between the weak sense and the strong sense of opinion. According to him: "a matter of opinion ... is a matter with regard to which criteria are unclear or even possibly non-existent or the evidence is a scanty and there is, consequently, doubt and uncertainty (this is the weaker sense of opinion which is distinguishable from the proposition that two plus two equals four which is still an opinion, but) an outcome of a mental effort, the result of the mind's activity of systematisation and validation"[16]. In fact, to make it more forceful and emphatic, Wiredu concurs that

> *if an opinion can ever be conceived of as a thought advanced with full assurance with full assurance from some point of view, then there is nothing amiss philosophically in classing scientific and mathematical propositions alongside others as opinion*[17].

If we want to be sincere, we cannot jettison the assertion that all of our thoughts, expressed in the propositions of mathematics and formal logic were formerly part of our individual subjective mind. A person cannot produce a thought outside his own thought system. It is like a child who denies the womb as his first environment before birth; such a child is like somebody destroying the foundation of an edifice, thinking that the whole castle will stand. Thus, Wiredu's submission that "opinion is normally the outcome of rational inquiry and that the formation of opinion is governed

by rules of evidence and of formal"[18] seems to have some force of persuasion.

The little problem with Wiredu's theory of truth is the difficuly in understanding the meaning of "point of view", with which he seems not to draw any distinction between 'objectivity' and 'subjectivity'. It should be understood that the whole conception of truth is anchored on the cleavage between what is true and what is mere opinion. While the former can never be false without contradiction, the latter can be false without contradiction. Yet, it can still be conceded to Wiredu that we cannot arrive at the 'objective' (truth) without passing through the 'subjective' (opinion). It can be advised that one should be careful not to be overly critical of the possibility of the equation of 'opinion' to 'knowledge' as the case is with the critics of Prof. Wiresu's conception of truth and opinion. Mutatis mutandis, the same appeal goes for justified True Belief and Knowledge. Justified True Belief can be knowledge given possible improved reformulation of justified True Belief.

We have seen that Prof. Wiredu has put truth in the subjective realm (cognitive point of view). He is claiming that whatever is considered as true is a judgement from the subjective realm. I have also tried to relativise truth by arguing that truth depends on time and circumstance. 'Truth' in both views is relative. For me, it is relative to time and circumstance, but for Wiredu, it is relative to an individuals cognitive subjective state - what he call his "point of view".

In conclusion, I like to submit that extreme skepticism can be dangerous. This danger is so great that rather than highlighting the cases where justified True Belief appears not to be knowledge, we would do better to suggest alternative illustration that would make it easier to see justified True Belief as knowledge with an improved conception on the nature and conditions of truth.

NOTES AND REFERENCES

1 Gettier, 'Is Justified True Belief Knowledge?' In Analysis, Vol. 23, June 1963 (Copyright), Basil Blackwell, pp. 121 ff: Reprinted in A.P. Griffiths, Knowledge And Belief, Oxford University Press, 1968.

2 B. Sosa, 'The Analysis of Knowledge that p', reprinted from Analysis, Vol. 25, No 1, New series, 1964, p. 1.

3 Ibid.

4 Ibid., p. 2.

5 Ibid.

6 For recent discussions on the distinction between Knowledge and Belief, see R.K. Shope, The Analysis of Knowing, Princeton University Press, New Jersey, 1983.

7 In recent times, Popper's conception of objective knowledge has called forth various criticisms. His assumption that knowledge is not static helps to identify the role of conjectures and refutation in the scientific enterprise. For more detail information on Popper's conception of objectives knowledge, see chapters 3 and 4 of his Objective Knowledge, (An Evolutionary Approach), Clarendon Press, London, 1972.

8 For example, Protagoras has shown as reported by D. W. Hamlyn, that knowledge of things in the physical world is relative. He claims that "man is the measure of all things". Gorgias has remarked that: "nothing exists; if anything exists, it cannot be known, and if it is known, it cannot be communicated. See Hamlyn, The Theory of Knowledge, Macmillan, London, 1986, footnote 1, p. 8.

9 See Wiredu's discussion of 'Truth as Opinion' in his book Philosophy and an African Culture, Cambridge University Press, 1980. p.

10 111.

11 Ibid. p. 114.

12 Ibid.

13 Ibid., p. 115.

14 P.O. Bodunrin, (ed.), Philosophy In Africa: Trends And Perspectives, O. A. U. Press, Ife, 1985, p. 12.

15 Wiredu, op.cit., p. 115.

16 See Wiredu's defence of opinion in Philosophy And an African Culture, op.cit., p. 175.

17 Ibid.

18 Ibid., p. 176.

An Examination of Feyerabend's Methodological Anarchism

By

Dr. F. N. Ndubuisi
Philosophy Dept.,
University of Lagos

ABSTRACT

There are quite a number of controversial issues in the study of Philosophy of Science. The issues of methodology more than any other has elicited a lot of interest among scholars. The contentious issue is on what approach to adopt in scientific research programmes.

Feyerabend is one of such scholars that have demostrated significant interest in this. His position is both intellectually stimulating and controversial. He argues that science has no method: that the dictum "anything goes" remains the only thing that can ensure progress in science.

The task of this paper entails a critical exposition of this position. We will look at his position on critical issues in science, his attacks on Popper and an appraisal of his thesis.

ON METHOD

Feyerabend was very vehement in his attack on method, through which he debunks the idea of rationality of science. He was also opposed to the tradition of searching for a system of rules which it is believed are meant to guide scientists in the choice of theory. There are no such rules according to him, and attempts to adopt any particular rule or system can only impede the advancement of science.

He says,

> *.....the idea of a fixed method or of a fixed theory of rationality, rests on too naive of a view of man and his social surroundings. To those who look at the rich material provided by history, and who are not intent to improverishing it in order to please their own instincts, their craving for intellectual security in the form of clarity, precision, "objectivity, truth,. It will become clear that there is only one prin-*

ciples that can be defended under all circumstances and in all stages of human development. It is the principle: anything goes.[1]

A hypothesis that contradicts well-confirmed theories or well-established experimental results could be used. To examine the principle in concrete detail necessitates tracing the consequences of counter-rules' that oppose some familiar rules of the scientific enterprise. He advises further that if we are genuinely interested in the advancement of scientific knowledge there is the need for us to proceed counter- inductively. He believes that some of the most important formal properties of a theory are found by contrast and not by analysis. As Madan points out, Feyerabend, "stresses the approximate nature of all theory, thereby arguing in favour of the possibility of the existence of mutually inconsistent factually adequate theories"[2]. And for a scientist to maximise the empirical content of the views he holds and for him to clearly appreciate them very well, he needs to introduce other views - and this he could achieve by the adoption of a pluralistic methodology. There is the need for him to make a comparison between ideas: he needs also to improve the views that have failed in the competition rather than throwing such away. But adopting this procedure, he will be able to retain the theories of man and cosmos as found in the genesis or in the Pimonder. Such could be expanded and made use of to measure the success of evolution and other modern views. The point will then become clear to him that the thesis of evolution is not as good as is generally assumed, and the need for it to be supplemented or totally replaced by an improved version of genesis. The knowledge that is acquired by this procedure.

> is not a series of self-consistent theories that converges toward an ideal view, it is not a gradual approach to the truth. It is rather an over-increasing ocean of mutually incompatible (and perhaps even incommensurable) alternatives, each single theory, each fairy tales, each myth, that is part of the collection forcing the others into greater articulation and all of them contributing via this process of competition to the development of our consciousness.[3]

Nothing is to be seen capable of acting final settlement, just as no view can ever be omitted from a comprehensive account. He (Feyerabend) was of the opinion that all views are worth serious consideration. As a result, the views of the experts, laymen, professionals, dilettante truth-

freaks and even liars are all invited to the enrichment of our culture.[4]

He abhors the view that the task of a scientist is to search for truth (as Popper advocates)

> *or 'to praise god' or 'to systematise observation' or 'to improve predictions.' These are but side effects of an activity to which his attention is now mainly directed and which is 'to make the weaker case the stronger' and thereby to sustain the motion of the whole.*[5]

There are states of affairs when we can see things as they are and others when we are deceived. What can be deduced from this is that some of our sensory impressions are veridical while others are not. And prejudices can only be noted by contrast not by analysis. The material at the disposal of a scientist, his most sublime theories, in addition to his most sophisticated technique are structured exactly in the same way. It embodies principles that are not known, which if known would be most difficult to test. What this goes to establish is the fact that a theory clashes with the evidence is not because it is incorrect, but because the evidence is contaminated.

Feyerabend believes that we cannot discover from inside what we have been using and the kind of world we presuppose. To be able to accomplish this, an external standard of criticism is required. There is similarly the need for a set alternative assumptions, a dream world so as to unveil the features of the real world. We need the invention of a novel conceptual system which suspends or clashes with the most carefully established observational results, confounds the most plausible theoretical principles and introduces perception that cannot form part of the existing perceptual world. This procedure is seen by Feyerabend as counter-inductive: though he remarks that by this he was not recommending any methodology but merely intends to harp on the fact that any method has its limit. This can be shown, even the irrationality of the rules that are taken to be basic. He sees an anarchist as an undercover agent that plays the game of reason so as to under-cut the authority of reason: truth, honesty, justice, among others.

There is no sense in the emphasis for consistency, which requires that new hypotheses have to agree with accepted theories. This insistence lacks merit for adhering to it is like preserving the old theories at the expense of better ones. But when a hypothesis contradicts well-confirmed theories, it gives us evidence that cannot be obtained in any other way. In line with the above reasoning, he fully supports the proliferation of theo-

ries. This enhances the advancement of science in contrast to uniformity that impairs its critical power. An individual can similarly be adversely affected by uniformity of idea: such could endarger, and dwarf his progress. Newton's theory, for instance, is inconsistent with Gallileo's law of free fall and also with Kepler's laws: that statistical thermodynamics is inconsistent with the second law of the phenomenological theory, that wave optics is inconsistent with geometrical optics.

It has to be noted, however, according to Feyerabend, that what is being said here is logical inconsistency. We are not bothered with the inconsistency of Newton's theory and Galileo's law; we are instead interested in the inconsistency of some consequences of Newton's theory in the arena of validity of Galileo's law. The situation is especially clear in the last case. Galileo's law states that the acceleration of free fall is constant, while application of Newton's theory to the surface of the earth gives an acceleration that is not constant but decreases (although imperceptibly within the distance form the centre of the earth). Our procedure here must entail the confrontation of the accepted point of view with as many relevant facts as possible. The exclusion of alternatives is just a measure of expediency: their invention not only does not help, it even hinders progress by absorbing time and manpower that could be devoted to better things.

A uniformed opinion was not one of the features Feyerabend advocates for the acquisition of scientific knowledge. A uniform opinion may be a virtue within a church or religious circle or greedy victims of some,

> *(ancient or modern) myth, or for the weak and followers of some tyrant. Variety of opinion is necessary for objective knowledge. And a method that encourages variety is also the only method that is compatible with a humanitarian outlook. To the extent to which the consistency condition delimits variety, it contains a theological element which lies of course in the worship of facts so characteristic of nearly all empricism.*[6]

All ideas, reasons Feyerebend, no matter how ancient are capable of improving our knowledge. Such ideas could be from ancient myth, modern prejudice, from the lubrications of exports or the fantasies of cranks. The utilization of the whole history of a subject is in the attempt to improve its most 'advanced' stage. By seeing the acquisition of knowledge in this totality,

the separation between the history of science, its philosphy and the science itself dissolves into thin air and so does the separation between science and non-science."

This idea is sharply opposed to the position of Popper on the need for a clear-cut demarcation between science and non-science.

THEORY FORMATION

Feyerabend sees a number of advantages in the proliferation of theories. Foremost it leads to the emergence of alternative views. It does not also allow the elimination of older theories that have been refuted. Such refuted theories are assets to the content of their victorious rivals. While Popper reasons that a refuted theory should be done away with, Feyerabend is of the view that even after a theory has been refuted, it still stands to perform positive function in the structure of scientific enterprise. Being rigid in issues of theories is unhelpful, he argues, as even the most advanced and the obviously most secured theory is not safe to the extent that it requires no modification or replacement with the assistance of views which the concert of ignorance has already thrown into the dustbin of history. It is specifically for this reason that the knowledge of today may turn the fairly-tale of tomorrow and now the most laughable myths may afterall turn into the most valuable piece of scientific knowledge.

It is this liberal view of Feyerabend that informed his pluralistic theory. Even metaphysics, he reasons, is important for methodology and constitutes an essential part of a humanitarian outlook. It is impossible, he argues, for a theory to agree with all the facts in its domain. And the blame is not to be placed on theories as it is to be noted that:

> *facts are constituted by older ideologies and a clash between facts and theories may be proof of progress. It is also a first step in our attempt to find the principles implicit in familiar observational notions.*[8]

He noted that when the invention, elaboration and use of theories that are inconsistent (not just with other theories but even with experimental facts evaluated) we will discover that no single theory ever agrees with all the known facts in its domain. This is a creation of experiments and measurements of the highest precision and reliability and not because of sloppy procedure.

He queries the possibility of living with the rules of critical rationalism as championed by the Poperian school of thoughts. He doubts that

we can know science as we do today if we had followed the rules this way. He believes this critical rationalism arose out of the need to understand Einsteinian revolution; and this was extended to even the conduct of one's private life. But when the interest of man is considered, (especially the issue of his freedom from hunger, despair, from the tyranny of constipated systems of thought and not the academic freedom of the will) then we are moving in the worst possible fashion. If science as we know it today constitutes essentially in the search for truth in the style of traditional philosphy, he believes this will create a monster. He asks if this has the potency to harm man, turn him into a miserable, unfriendly self-righteous mechanism without charm or humour. He repeats the question posed by Kierkegard whether it is not possible that his activity as an object (or a critico-rational) observer nature weakens his strength as a human[9]. After reflecting on the above issues Feyerabend was convinced that a reform of the sciences that makes them more subjecttive (in Kierkegard's sense) is urgently needed. He believed it is impossible to have both science as we know it and the rules of a critical rationalism as stated above. He equally disagrees with Popper's view that the actual development of institutions, ideas, practices and so on does actually start from a problem; it rather starts from some insignificant activity like playing which as a side effect results in development which ultimately can be viewed as solution to unrealized problems. He sees also Popper's thesis of falsification as dangerous as it is capable of wiping our science, and would not have in the first place allow it to start.

Science, according to Feyerabend, does not develop by critical rationalism which Popper advocates. He resents such recommendations of Popper as falsifications, increase content, avoidance of adhoc hypothesis. He believe all these are unnecessary for, science is much more 'sloppy' and 'irrational' than its methodological image. He rather sees such things as 'deviations' 'errors' as pre-conditions of progress. Besides, the ideas that we perceive today as the bedrock of science are there just because such things as prejudice, conceit, passion, exist and because these things opposed reason and because they were allowed to have their way. The deduction that could be made from all this is that even in the arena of science, reason cannot and should not be permitted to be comprehensive and that it must often be overruled or eliminated in favour of other agencies. It is difficult to find any rule that is valid in all circumstances, just as it is impossible to find any agency that could be appealed to in all times. By the nature of science, reason cannot be universal: and we cannot also ex-

clude unreason. The ancient and the modern also are at interplay.

> *There is no longer any antagonism between the most advanced parts of science and ancient points of view which have degenerated because of scientific warfare. Ancient myths are reconsidered, brought into testable form, examined*[10]

Feyerabend believe that a fruitful exchange between science and non-science world views will be the best interest of science development. And anarchistic approach is only what ensure such realization. And anarchism, he believes, beside being necessary for the internal progress of science is also required for the development of our culture as a whole. He attacks Popper's view that scientific investigation starts with problems. His criticism rests on the fact that this kind of characterisation fails to put into consideration the fact that problem may be wrongly formulated, that one may be out to carry enquiries about properties of things and processes that later views declare to be non-existent. A solution to such a problem cannot be found. The outcome in such state of affairs is that they are dissolved and removed from the domain of legitimate enquiry. He gives as an instance the problem of the absolute velocity of the earth, which, in his view, was dissolved by the theory of relativity that denied the existence of absolute velocity.

ATTACK ON POPPER:

Paul Feyerabend was no doubt one of the admirers of Popper's intellectual status. He respects Popper's personality as a scholar that was able to make his mark in his chosen area of interest - the methodology of science.

In spite of this Paul Feyerabend vehemently disagrees with the central issue in Popper's thesis as regards the methodology of science.

As a matter of fact, Paul Feyerabend is anti-methodology - is opposed to any kind of methodology in science and he believes he did not recommend any. Science as a versatile and dynamic enterprise does not need any methodology. A methodology for science is like a chain tied round it which in essence is only a disaster to its advancement. And progress, he argues, is very crucial as far as science is concerned, and

> *the only principle that does not inhibit progress is anything goes. The idea of a methodology that contains firm, unchanging, and absolutely binding principles for con-*

ducting the business of science meets considerable difficulty when confronted with the result of historical research.[11]

He believes that there is no single rule if we should go by historical research, however plausible and however firmly grounded in epistemology, that is not violated at some time or the other. Such violations certainly, he argues, cannot be attributed to accidental events, just as they cannot be seen as results of insufficient knowledge or of inattention that might have been avoided. Rather than see it in any of the stated ways, they are to be accepted as imperative for progress. He emphasizes that one of the most salient point that is visible in the history of philosphy and science in the fact that

events and developments such as the invention of atomism in antiquity, the Copernican Revolution, the rise of modern atomism (Kinetic Theory, dispersion theory, stereochemistry.) The gradual emergence of the wave theory of light occurred only because some thinker either decided not to be bound by certain 'obvious' methodological rules or because they unwittingly broke them"[12]

The practice of science is in consonance with this pragmatic attitude and it is only when the practitioners of science conform to this requirement that progress in science could be assumed. Feyerabend asserts that no matter how fundamental or crucial a rule in science may be there are always circumstances when it is most advisable to ignore the rule and adopt the opposite.

He counters Popper' position that we should eschew adhoc hypothesis, and go straight rather for bold conjecture. Feyerabend feels rather that there are instances when it is advisable.

To introduce, elaborate and defend adhoc hypothesis or hypotheses which contradict well-established and generally accepted experimental results, or hypothesis whose contentt is smaller than the content of the existing and empirically adequate alternative or self-inconsistent hypotheses and so on."[13].

Feyerabend also disagrees with Popper that an investigation commences with the awareness of a problem. He believes rather that from an analysis of the relation between ideas and action it will be noticed that interests, forces, propaganda and brain-washing technique play a much greater role

than is commonly believed in the growth of our knowledge as well as in the growth of scientific knowledge. It is taken for granted, he argues further, that action and distinct understanding of new ideas precede and should precede their formulation and their institutional expression. The whole idea of having an idea or a problem before we act, that is speak, build or destroy is obviously not the way development takes place in small children. Feyerabend makes the point thus:

> *they (children) use words, they combine them, they play with them until they grasp a meaning that has so far been beyond their reach. And the initial playful activity is an essential prerequisite of the final act of understanding. There is no reason why this mechanism should cease to function in the adult."*[14]

For instance, it should be expected that the idea of liberty could be made lucid only by means of the very same actions that were supposed to create liberty. The creation of a thing and creation in addition to complete comprehension of a correct idea of the thing, are most often parts of one and the same indivisible process and cannot be demarcated by bringing the process to a stop.[15] Well-defined programme guiding the process is not in existence, and such a programme cannot guide it, as it contains the condition for the realisation of all possible programmes. It is rather guided by a vague, urge by a 'passion'. From the passion arises specific behaviuor which in turn creates the circumstances and the ideas necessary for analysing and explaining the process for making it rational. He draws an instance from the development of the Copernican point of view, from Galileo to the 20th century.

> *We start with a strong belief that runs counter to contemporary reason and contemporary experience. The belief spreads and finds support in other beliefs which are equally beliefs which are equally unreasonable, if not more so ..."*[16]

There is now a new direction to research, new kinds of instruments are created, 'evidence' is related to theory in new ways until an idealogy emerges sufficiently rich to provide independent arguments for any particular part of it and mobile enough to find such arguments whenever they seem to be required. And "...theories became clear and ' reasonable only after incoherent parts of them have been used for a long time. Such unreasonable, nonsensical, unmethodological foreplay thus turns out to be an unavoidable precondition of clarity and of empirical success."[17]

Feyerabend denied his frequent uses of words such as 'progress' 'advance', 'improvement' (as a claim to a special possession of knowledge on what is good or bad about sciences or an attempt to impose such on anybody. Everybody, he believes, can read and understand the terms in his own way and to a set of tradition he belongs. For instance, an empiricist will see progress as a transition to a theory which provides direct empirical tests for most of its basic assumptions. Others may, in contrast, view progress in terms of unification and harmony, at times at the expense of empirical adequacy. Einstain, Feyerabend believes, perceives general theory of relativity this way.

He (Feyerabend) sees his thesis - anarchism - as making provision for progress in whatever direction one chooses to go. Even in the issues of a law-and-oder in science, success can only be achieved if anarchistic moves are occasionally permitted to prevail. Following Feyerabend Newton Smith points out that science.

> *....is privilege neither in terms of method nor terms of results; and in view of this we ought to remove science from its pedestal and strive to create a society in which all traditions have equal access to power and education. Among the traditions which Feyerabend wishes to see benefit from this equal access are astrology, witchcraft and traditional medicine."*[18]

APPRAISAL

Feyerabend does not dispute the fact that he advocates irrationalism in the pursuit of scientific knowledge,his view on science no doubt, is a radical departure from those of other philosophers of science. He was both a radical and revolutionary in every sense of the word. However, one finds most of his view unacceptable, and even inconsistent. For instance, his thesis that science is without method is absurd; and infact he was unable to be consistent in this stance. As noted in his work, he is a champion of anachism and plurality of theories. If anarchism and proliferation of theories are advocated by him rather than conjectures and refutations as enunciated by Popper, it means that it is such methodology that he propounds. Besides one really does not know the extent of rationality science can attain if there is no caution in the proliferation of theories as Feyerabend favours a discipline such as science and any other for that matter should have rules and regulations as guides for the formulation of theories; and such theories should have specific problems they tend to solve, and only

those that have very strong foundation should pass as scientific theories.

This stance also opposes Feyerabend's view that anarchism should be a benefiting factor in scientific enterprise. If anarchism is understood to be disorder, lack of rules and regulations it is highly doubtful if it is an asset in an academic enterprise. In science, the procedure requires some elements of care to the extent of being meticulous. If care is thrown to the wind, then there is a breakdown in scientific research.

One fails to see too a strong basis for Feyerabend's opposition to Popper's view that a problem proceeds scientific investigation. There can be quite sincerely a number of academic investigations that are not motivated by specific problems but certainly genuine scientific investigations are always motivated by concrete scientific problems. Copernican revolution was motivated by the puzzle the universe poses to him: Newton's gravitational theory was an outcome of his (Newton) genuine interest to unravel the composition and the effect of natural forces on the creatures of the cosmos.

We also find it not quite easy to believe wholly Feyerabend's thesis that things are known by contrast and not by analysis. What we can understand by this stand is an urge for us to accommodate views other than the one that is accepted in the official circle. This view is anti-kuhn whose idea of scientific methodology is the acceptance of a paradigm which prevails in a given scientific community. Further, Feyerabend obviously in opposition to Popper believes that an idea that is not entirely sound be improved upon rather than discarded. This view contradicts Popper's recommendation of a crucial test: refutations or corroborations on the basis of such crucial tests. A theory that fails our tests stands refuted and should be discarded rather than attempt to improve on the same.

We can acquire knowledge by contrast; analysis is also a medium of acquiring knowledge and in fact the strength of our knowledge is achieved by analysis. We cannot also accept the view that ideas that are found to lack solid foundation should be improved upon than a more serious attempt to source for new information and ideas for attending to our problems. A reseacher who insists on improving on an idea that has failed may suffer mental depreciation and a possible lost of interest in a research he is carrying out. The best approach to a problem is when a particular assumed solution is tried without success, an entirely new one should be sourced.

Also truth is guiding focus in scientific enterprise. When a researcher has a concept of truth at the back of his mind, then his approach and where

he is going will be a bit clear. Ironically, however, Feyerabend argues that the search for truth is not in consonance with scientific enterprise. One can hardly believe this. Truth as an ultimate goal is what keeps on the spirit of scientific enquiries. Being able to reach this truth is entirely a different thing.

We cannot also accommodate Feyerabend's view that inconsistency is a benefiting factor for progress in science. A serious researcher is always anxious to achieve a consistent view than the converse. It is only such that ensures that there is coherence and rationality in his endeavours. Whenever inconsistency sets in, he then knows that a major problem is apparent in his work, which must be taken care of before further advancement.

There might not be the need for a uniform view in science, as Feyerabend believes, but whatever view one holds should have a basis that centres on accepted basic principles of science. Both metaphysics and science have the universe as their field of operation. While metaphysics rests on abstract and immaterial entities science's focal interest is on material things. The two enterprises aim to uncover the mysteries of the world, harnessing the same for the service of mankind. Thus the material and the immaterial blend together to give us a picture of the whole. For instance, science's law of energy which is that energy is indestructible has a metaphysical counter-point in the doctrine of the immotality of the soul or the theory of the indestructibility of the human spirits. One can see a clear interaction between the body which is material and the soul which is immaterial. The soul functions well when it is properly fed with material things and the body is guided well too when the spirit is in the best form. To this extent, one can accommodate Feyerabend's view. But there is the serious need to note that Popper was not opposed to metaphysics, neither did he, like the 'Positivists, dismiss it as a meaningless garbage. The point he made, instead, is that metaphysics and science deal with different realities, and that the methodology of investigating the two are as a result not the same. This point is definitely not in an anti-metaphysical stance.

Feyerabend fears that Popper's falsification theory is capable of wiping out science; and in fact would not have allowed it to start in the first place This fear can only be if a scientist makes falsification his pre-occupation, without proffering alternatives. The Dalton's atomic theory which was that an atom is an indivisible part of an element was refuted by a modern theory of atom which is that an atom is divisible into electron, neutron and proton. The fact that the Dalton's atomic theory which previously

held away was refuted and replaced by a mush more modern theory, makes for a better understanding of an atom. Feyerabend made quite a positive contribution in the development of philosophy of science. A number of his recommendations can quite make for progress in scientific enterprise in spite of this we find it difficult to agree with all his ideas.

REFERENCES

1. P. Feyerabend, Against Method, Great Britain, The Thetford Press Ltd, 1984, p. 28.
2. D. B. Madan, "Inconsistent Theories as Scientific Objectives" in the Philosophy of Science, Official Journal of the Philosophy of Science Association, Vol. 45, No. 3, September, 1978, p. 453.
3. Ibid, p. 30.
4. Ibid, p. 30
5. Ibid, p. 30.
6. Ibid, p. 40.
7. Ibid, p. 48.
8. Ibid, p, 55.
9. Ibid, p. 175.
10. Feyerabend "On the Critique of Scientific Reason" In the Bostom Studies In the Philosophy of Science, Essays in Memory of IMRE Lakatos, p. 13.
11. P. Feyerabend, Against Method, p. 25.
12. Ibid, p. 23.
13. Ibid, p. 24.
14. Ibid, p. 26.
15 Ibid, p. 26.
16. Ibid, p. 27.
17. Ibid, p. 27.
18. W. A. Newton Smith, The Rationality of Science, London, Rentledge, and Kegan Paul, 1981 p. 125.

DEATH, SUICIDE AND THE CRISIS OF HUMAN EXISTENCE

By

Christopher Agulanna
Department of Philosphy
University of Ibadan
Ibadan

DEATH: A CONCEPTUAL CLARIFICATION

Life has no reason,
A sruggling through the gloom:
And the senseless end of it
Is the insult of the tomb.[1]

The Geman philosopher, Martin Heidegger, defined death as 'perishing' - the ending of that which lives. For Epicurus of old, death means extinction or the extinguishing of human life and consciousness. But for our purposes here, we shall understand death to mean the disintegration of the human body and the cessation of our experiences. The thought of dying is one which causes distress and anguish to the human heart, for it is a most difficult thing to imagine "a state where there is no more 'I', after death".[2] This is because "life is all one has, and the loss of its is the greatest loss one can sustain.[3] As one writer poignantly put it: "Men die; and they are happy".[4] Not only that; they also "weep because the world's all wrong"[5]. Worse still, they see this life of abject fear as quite unbearable - worse than death, in fact.

Discussion on the theme of death is often attended with feeling of anguish trepidation and fear. This is not unconnected with the fact that the issue of dying is not only seen as awful and harpy but also a negative and uncanny phenomenon. The dread that human beings attach to the phenomenon of death is shown by the approach that even great thinkers adopt towards its discussion. Most philosophers simply avoid discussing death. Some others try to minimize the fear it causes by choosing to be moot about it.

Arthur Schopenhauer, the philospher of Pessimism who was the first of the major philosophers to deal extensively with the subject declared

that death is the muse of philosophy, even though this muse is seldom avowed. However, this reticence that most scholars have shown towards the discussion of the issue of death may not only be superficial but could also be attributed "to some form of repression".[6]

But which ever attitude we choose to adopt to this subject, the issue at stake is this: "if, as many people believe, death is the unequivocal and permanent end of our existence, the question arises whether it is a bad thing to die".[7] People differ in the way they answer this question - while some people think death is dreadful, "others have no objection to death perse, through they hope their own will be neither premature nor painful".[8]

THE ISSUES AT STAKE

In trying to tackle the issues raised above, the very first question that taxes our mind is this: Is death permanent in the sense that it is "unsupplemented by any form of conscious survival"?[9] If the answer is in the affirmative, the next question that follows is whether it is an evil thing to die! These questions will open up a fresh the whole question of the problem of evil in the world. The problem of evils is an insuperable one; it is as old as the world itself. How is it possible to justify the existence of radical evil? How is it possible to understand the suffering of the innocent, for example? The existence of evil in the world and the ghastly problem of human suffering are by far the greatest arguments against the claim that the world is governed by divine intelligence. How can we reconcile the idea of God's goodness with the fact of evil in the world?

The question addumbrated above constitute a major part of what this paper addresses. In this paper I hope to consider what death is, and how individuals and societies have approached it right from antiquity. I shall also consider the question of whether man survives death. In other words, is there a guarantee of the possibility of a post-mortem existence or does death end all that human life stands for? Even though this paper is not majorly concerned with the issue of whether we are, or might be immortal in some form, as with the question of whether death is an evil and, if it is, whether it renders life meaningless, it is also realized that there is no way one can treat the theme of human death without alluding to the question of whether there is an after life or the possibility of it. The question is an urgent one. Is there a life after death? Theists answer this question in the affirmative while A theists think that such a hope is unlikely to be realized. But suppose death really means annihilation in the sense that it is

unsupplemented by any form of conscious survival, what is the implication for human existence? There are people who argue that if death means extinction, then human life is a tragedy. As a matter of fact, if extinction is what awaits us at the end of our life, there is no doubt that this renders human existence as "a kind of cosmic joke, in which the major participants wait vainly for an understanding of the significance of their situation".[10]

The serious problem of suicide or self-murder which is given rise to by the feeling that the world is absurd and meaningless, is the last issue that I shall treat in this work. Man wants rationality but is faced everywhere by the irrational. He is impelled by the will to control and steer his fate, but he is chained by blind and evil forces. He is athirst for freedom, fraternity and solidarity, and everywhere he encounters a selfish social order, a dried-up bureacracy, a mechanized world readied for the impersonal slaughter of modern war. Man awaits for a voice from Heaven but receives only the answer of eternal silence. He feels dissonant (dissonance is the original meaning of absurdity), 'de trop, unwanted and insignificant; and the temptation of suicide follows fast upon the realization of such all pervading absurdity.

The Stoics, Epicurus and even David Hume welcomed suicide as a way of 'solving' the problems of the absurd. But there have been other philosophers who rejected suicide as a solution to the problem of human existence. In treating the problem of suicide, I shall make a historical run-down of how different individuals and societies have tried to resolve this great social problems. I shall then zero in on the attitude of contemporary existentialists to this elusive and difficult moral problem.

My opinion is that the duty of the philosopher goes beyond the mere analysis of words or the elimination of unclarities in our language of discourse. Much as clarity is important, to limit the whole duty of the philosopher to the analysis of language is to give philosophy no effective definition. So, the philosopher, instead of retreating into "a realm of eternal verities or of scientific methodology"[11] - like the language philosophers or posivitists of old - he should have something of practical relevance to say about such social and existential matters as suicide, human suffering and the issue of death. And this is where I suppose, the value of existentialist philosophy comes in.

Existentialist philosophers were all concerned with the problem of concrete human existence and man's daily experiences in the world. The existential thinker say that philosophy should be brought down to earth

and made to address the existential problems of life that affect man in his day-to-day activities in the world. And one such problem which man has to grapple with in life is the problem of suicide or self-murder - a problem which shall form a major part of the work.

DEATH AND THE PROBLEM OF EVIL

But let us start off with the question of whether the fact of death is an evil thing. The question can be posed in this form: Is death an evil or it is ennobling and redemptive? Perhaps the best way to approach this question is to consider what death does to us as human beings for if death is evil, it is because of what it deprives us of. Death "brings to an end all the goods that life contains".[12] Such goods include perception, desire and human conscious activity. Some philosophers argue that if death is permanent in the sense that it is "unsupplemented by any form of conscious survival"[13] then man is caught in a miasma of hopelessness and absurdity. But death does not only mean the termination of our lives but of our conscious experience as well. The experience of death may come in diverse ways; at times, it is preceded by old age, disease and pain. At other times, it comes suddenly and unannounced through accident or any other form of mishap. Death respects neither age nor colour: the sick die, the healthy person dies; people die through all forms of disasters; pregnant women die, young people die; the aged die also. People die in their sleep; other at the height of human achievement and recognition. What then do we make of death? Why do we even have to die at all? What really is death? As we noted at the beginning of this essay, Martin Heidegger holds that death means 'perishing' - it is not something which a human being meets at the end of his life trajectory. On the contrary, man dies every-day. According to Heidegger, "death is a way of life for man, for he is a being towards-death, a being who lives every moment of his life towards his death".[14]. Man's life is a progressive journey to death, for he begins to die from the day he is born. "Death", according to Heidgegger, "is a way to be which Dasein takes over as soon as it is. As soon as man is born, he is old enough to die"[15] For Jean-Paul Sartre, death is a phenomenon that render human existence absurd and opaque. 'Man, he says, 'is absurd, but he must grimly act as if he were not'. According to Sartre:

> *If we have to die, then our life has no meaning, because its problems receive no solution. It is absurd that we are born,*

it is absurd that we die.[16]

Sartre, together with most other existential thinkers see death as an evil phenomenon. The problems of evil, as we saw earlier, is an insuperable problem. Some people have tried to minimize the problem by referring to it as 'an illusion of the mind'. Others, like St. Thomas Aquinas refer to it as 'a privation' of that which is good. But tough-minded philosophers acknowledge the fact of evil in the world. For such philosophers, the fact of evil in the world renders the human condition tragic and the individual should just accept and clearheadedly acknowledge such evils as death. Evil is not only a reality but it is also 'dark, menacingly ugly, heart-rending and crushing".[17] The problem has been stated in many ways, but perhaps the following is the simplest and most direct:

> "How can there be evil in the world if God is both good and all-powerful?"[18]

Lance Mrroy tried to characterize evil this way:

> *Evil means, first of all, a mystery, the 'mysterium iniquitas'. We cannot know evil systematically or scientifically. It is brutal or elusive by turns vivid and vague, horrible and subtle. We can know it poetically, symbolically, historically, emotionally. We can know it by its works. But evil is sly bizarre.*[19]

CHALLENGE TO THEISM

The problem of evil is such that its "extent and nature... remains a persistent challenge to the integrity"[20] of religious believing. As one Christian writer acknowledged, "to many, the most powerful positive objection to belief in God is the fact of evil. Probably for most agnostics it is the appalling depth and extent of human suffering, more than anything else, that makes the idea of a loving creator seem so implausible and dispose them toward one or another of the various naturalistic theories of religion".[21] As a challenge to theism, "the problem of evil has traditionally been posed in the form of a dilemma: if God is perfectly loving, he must wish to abolish evil, and if He is all- powerful, He must be able to abolish evil. But evil exists; therefore God cannot be both omnipotent and perfectly loving"[22] This problem becomes even more accentuated with the fact that death could truly mean extinction. If this is really the case, some argue that life is nothing but a tradegy, or in the words of Albert Camus, a 'valued act of crass stupidity'. The recurrent evils of life, says Camus, are fear, pain, sickness, old age and death. And man is "crushed down by this irreparable discovery. It's ideas like this that kill...Men kill them-

selves because they cannot stand them".[23]

As one writer bluntly put it:

> *If death means extinction, there is no question but that old age, suffering, disease and death will gain the ultimate victory over each and every one of us, and thereby bring to nothing the belief that each of us is eternally precious to an all-sovereign God.*[24]

It was perhaps this thought that an unknown Japanese poet has in mind when he wished a thousand years ago:

> *If only, when one heard That Old Age was coming One could bolt the door, Answer, 'Not at home' And refuse to meet him.*[25]

Benjamin Disraeli had the same feeling of helplessness when he wrote:

> *Youth is a blunder;*
> *Manhood a struggle;*
> *Old Age a regret.*[26]

The ghastly problem of human suffering has posed perhaps the greatest challenge to religious faiths and believing. "The objection to belief in a providential deity challenges religion on both an intellectual and a moral level".[27]

Agnostics and atheists hold that the evil and "the imperfections of this world defeat the claim that its creator is both omnipotent and benevolent".[28] But a number of theistic scholars have taken up the gauntlet, fulminating against these antagonistic conclusion of the agnostic. A number of religious people argue that suffering is both 'enobling and redemptive' and that through it, God brings good to bear upon man. For those who argue this way, "suffering...is not an absolute evil, but has redeeming features. It may be an occasion for spiritual growth and an opportunity to make amend for sins".[29] At least St. Augustine believed this much when he argued that death is a punishment for human sin and that the only way to overcome the fear of it was through divide grace.[30] Thomas Aquinas was later to define evil as the 'privation of being'. "A thing", he argued, "is good by what it is: if it has failed to be what it should, to that extent, it is bad. Evil is purely negative...It has no 'formal' cause, because its form would be the privation or absence of good".[31]

Contemporary Christian Science denies the existence of evil, calling it an illusion of the mind. But this position is fraught with a number of problems. The unsavoury problem of human suffering as well as man's

painful existence in the world make this claim unlikely to be true. To define evil as an illusion or to characterize it is a 'privation of being' (whatever that means), is to give it no effective definition.

At best, it is a pat answer to a problem that is so glaringly evident to us all. It reminds us about the story of a Hasidic rabbi who was once asked by a student, 'why should we praise God for the evil things that happens as well as the good thing?' The rabbi replied that the question was too difficult for him to answer and advised his student to consult a certain holy man who had been beaten and tortured during a program. When the student located the holy man, who lay bleeding and dying, and asked him the question, the holy man replied: 'I cannot answer you, because nothing evil ever happened to me'.[32]

It is obvious that few can share the faith of that holy man. As a matter of fact, "many religious people recognise the existence of evils but consider them justifiable punishment for sin or the inevitable outcome of human folly"[33].

Christian 'theodicy' for example, does not claim to explain nor explain away evil, but argues that even in the misdt of evil, God is still good. The word 'theodicy' from the Greek 'theos' (God) and 'dike' (righteous) means the justification of God's goodness in the face of the fact of evils.[34]

But there are a number of other Christian thinkers who hold that the problem of evil can be overcome if we only but realize that God is a being who suffers with suffering humanity.. For examples, the Spanish philosopher Miguel De Unamuno held that God is a suffering God who suffers and feels our pains with us. Unamuno argued that it is because God suffers with us that he loves us, for according to him, "there is no true love save in suffering".[35] B.Z. Cooper, arguing in the same vein, says "we can say that suffering is the way that God has his deity; that is, God's way of suffering is his deity".[36] One other Christian scholar argues that God cares passionately and selflessly about our pains. "He cares so much that the he came to share it. He is for ever the suffering God".[37] In the words of this scholar:

> *"It is only belief in a suffering God that stops us from either becoming totally callous or going out of our minds at all the suffering which afflicts our world."*[38]

The idea of God as a suffering being is located within a strand of Western Philosphy known as Process philosphy. And it is a concept of God formed within the framework of the metaphysics of Hegel and Alfred North Witehead. The God of process philosophy is not inifinite, immu-

table or impassible. Rather, he is a being held down by matter and is struggling to free himself from the brute matter that weighs down on him. "He changes along with the historico-cosmic process and he suffer along with mankind. For he is a changing and suffering God.[39] The God of process philosophy is a pantheistic God. Pantheism is the theory that the universe is part of God and within God; that the development of the parts means the development of the whole and that "God evolves and develops along with cosmic evolution and development and suffer in and with the suffering humanity".[40]

Philosophers who postulated the idea of a suffering God were no doubt trying to overcome the problem of evil in the world, which as we have argued, is one of the greatest challenges against the claims that God is omnipotent and all-loving. But the major problem with the idea of a suffering deity is that it renders God powerless and impotent. And "the thought of an impotent deity, labouring and suffering under the weight of matter can hardly inspire confidence and hope in man".[41] Cryril Richard says the God of process philosophy is really not God, for this newfangled deity "is part of a process greater than he is, and which may eventually be victoious over him"[42] Above all, the idea of a deity subjugated and weighed down by matter is not only unorthodox but will set many believers aghast and horrifed! At this point, perhaps I should just reciterate a point I have made already, which is that he problem of evil is an insuperable problem. The problem is insoluble (and it remains insoluble, no matter how we try to evade it). Perhaps we should just accept it and live by it.

The desirable thing to do is struggle to make life in the world "a social reality in all the ramified ways that need to be done".[43]

But returning to our major concern in this essay whcih is the issue of death: historically, soceities and individuals have tried to understand the mystery of death. As it turns out, discussions on death have often been metaphysical, arcane and quaint. Amongst primitive peoples, death was attributed to the agency of gods or demons who are jealous of human achievement. Death was seen as an enemy to be feared and if possible, avoided. This feeling was captured by W.B. Yeats when in the poem 'Death', he wrote:

Nor dread nor hope attend
A dying animal.
A man awaits his end,
Dreading and hoping all.

From the little we know about the life of Socrates, he saw suicide as an

act capable of bringing down the wrath of the gods but allowed at the same time that the permission of the gods could be made manifest by a 'visible necessity of dying' as had been imposed on himself by the society. So, it is not unlikely that he would have seen death as a welcome relief to the problem of temporal existence if the gods so willed it. For Epicurus of old, death meant extinction; and since it causes us no discomfort, we should not fear it.

Most religious people on their part see death as that which opens the door to new and higher quality of life - a life more enduring than that lived in this terrestial realm.

Perhaps the best approach to this essay should have been to make historical run down of how different societies and individuals have treated the theme of death. But the dearth of materials on this subject makes such an approach practically impossible. "Although most of the great philosphers have touched on the problem of death, few have dealt with it systematically or in detail".[44] And because of the paucity of materials on this subject, "the primary concern of most philosophers who have dealt with the question of death has been to discover ways in which man may mitigate or overcome the fear it tends to inspire".[45] We shall immediately look at the ways some philosophers have offered that we can mitigate the fear that death inspires.

THE FEAR OF DEATH

With regards to allaying the fear that death creates, "the great divide is between those who argues that only the hope of personal immorality will ever reconcile man to death and those who argue that the fear of death may be mitigated or overcome even when death is accepted as the ultimate extinction of the individual person".[46] Christians and Moslems as well as most other religious people offer the first 'solution'. Epicurus of old tried to offer the second 'solution'. He saw the fear attached to death as stemming from the fact that death is seen as painful and from the belief that the soul survives to experience pain or torture in an afterlife. Epicurus saw both belief as mistaken, for "although death may be precipatated by painful disaease. death itself is perfectly a painless loss of consciousness, no more to be feared than falling asleep".[47] Epicurus tried to demonstrated "the groundlessness of the two overwhelming fears that troubled his contemporaries, the fear of death and the fear of divine retribution. The philosophy of nature which he finds best suited to the task destroying these terrifying chimeras is the 'atomism' of Democritus, in which the universe is

explained wholly in terms of 'atoms in motion in the void'.[48] Epicurus held that the soul is merely a special organisation of material atom which cannot survive physical destruction. Hence, he says:

Death is nothing to us ... It does not concern either
the living or the dead since for the former it is not,
and the latter are no more.[49]

But people have objected to Epicurus' conception of the soul and have criticized his view with regards to its immortality. But the major objection to Epicurus and his followers is that they have falsely diagnosed the cause of mankind's fear of death. "Death terrorizes us, not because we fear it as painfuful, but because we are unwilling to lose consciousness permanently".[50]

On their part, the Stoics of old as well as contemporary existentialists offered that the fear of death can be allayed only by facing it direclty. For example, one of the later Stoics, Lucius Annaeus Seneca (tutor and advise of emperor Nero) offered that the best way to overcome the fear of death was to think of it constantly. For Benedict Spinoza, the one way people can allay the fear of death is by by diverting attention from it. But Spinoza's position has been criticized on the ground that the fear of death is frequently an involuntary sentiment that cannot be conquered by a merely conscious decision or a bare act of will. It is not enough to tell people not to think of death; one must explain how they can avoid thinking of it.[51]

Perhaps this was what Bertrand Russell tried to do when he made his famous statement:

"when I die, I shall rot and nothing of my ego will survive".[52]

But Bertrand Rusell's statement creates more problems than it solves. According to Paul Edwards, it is exactly this statement "that people wish to avoid or put off".[53] Nobody feels comfortable at the thought of the cessation of his memory or experiences. "A person thinking of his own death is thinking of the destruction or disintegration of his body and of the cessation of his experience".[54]

There is a legend[55] from Greek mythology, which had a woman coming down to the River Styx for ferrying over to the region of departed spirits. Charon, the ferryman, reminded the woman thatif she wished, she could drink the waters of Lethe and forget the life she was leaving. This appealed to her, because, as she put it: 'This means that I will forget how I have suffered'. 'And how you have rejoiced', said Charon. The woman continued, I will forget my failure'.

'Yes', said Charon, ' and your sucesses'. 'I will also forget how I have been hated', she said. 'True', said the old ferrymn, 'but also how you have been loved. The woman thought the matter over for a moment and decided to reverse her decision to drink the Lethe potion. She would retain her memory of the bad, in order never to forget the good. This story corroborates our earlier claims that it is heart-rending for a person to think of the cessation of his memory and experience - which is exactly what death means.

TWO EXISTENTIALIST OPINIONS

Two contemporary existentailists, Martin Heidegger and Jean-Paul Sartre reflected on the phenomenon of death, but came out with opposing views. Some philosophers will argue that we should cultivate the awareness of death chiefly as means of heightening our sense of life. "The knowledge of death gives life a sense of urgency that it would otherwise lack".[56] For Heidegger, death is seen as meaningful part of human life; it is that which makes human life unique. He held that the awareness of death confers upon man a sense of his own individuality. Dying, according to him, is the one thing no one can do for me; each of us must die alone. To shut out the consciousness of death is, therefore, to refuse one's individuality and to live inuathentically. But Sartre rejects this Heideggerian view, referring to it as the theory of an idealist who is trying to run away from reality. Sartre says the first thing to note about death is the fact that it is absurd - it is that which reduces human life to nothingness; it is a negation of human life.

According to Sartre, "death is never that which gives life its meaning. It in on the contrary that which on principle removes all meaning from life.[57] What this Sartrean position shows is that death is an evil - the 'mysterium iniquitas. It is one phenomenon that both scares and stares us in the face. Man is torn between the seeming order and purpose in nature and the purposelessness he find in his heart. And it is the thought that we are going to die one day, without having accomplished our goals, that create anguish in the heart.

DEATH AND IMMORTALITY

But may this problem not be mitigated if there is a guarantee of immortality or an afterlife? Put differently, is there a guarantee that we shall survive the rotting or the burnirg or the mummification of our present bodies? For "given our entangled lives given the deep frustration of hu-

man hopes and aspirations, given the understandable that we humans should ask 'shall I live again?' Could there be 'another world' in which they could live in some decency?"[58] Perhaps if there is a guarantee of the persistence of personal consciuosness after the cessation of human life, human existence would be more meaningful and assuring. The desire for immortality is a very pervasive one. For given the sickening situation of human existence in which people, through no fault of their own, live blighted lives, it is understandable that people despair of the world, and "out of despair with our human lot, arises a hope for and even faith in immortality, an immortality that will give those (along with everyone else) who never have had anything like a decent chance in life another that is worthwhile"[59]. But is there any guarantee that this basic desire of man will ever be fulfilled in the end? Theists and religious people answer this question in the affirmative. As a matter of fact, most religious people believe, and hope for immortality in a future world of bliss where the evil suffered in this present world will be remedied. According to Johnn Hick "the fact that we cannot as of now establish life after death by empirical evidence does not mean that there is no life after death. We must not mistake absence of knowledge of for knowledge of absence".[60]

THE ATHEISTIC CHALLENGE

Atheists on their part contend that there is no guarantee of life after death. The atheistic postion is well argued by Kai Nielson who contends that it is evident that "after a time for all of us our bodies cease to be energised and left alone they will simply rot, and no matter how they are manipulatd, when they are thoroughly in that state there is no evidence of their ever been re-energised".[61] Saying that belief in an afterlife is both incoherent and unreasonable, Nielsen argues that "conception of the afterlife are so problematical that it is unreasonable for a philosophical and scientifically sophisticted person living in the ... twentieth century to believe in life eternal, to believe that we shall survive the rotting or the burning or the mummification of our present bodies".[62]

The Spanish philosopher, Miguel De Unamuno agrees that the thirst for immortality underlies all the actions of man.

But he holds that there is no guarantee that this desire will ever be fulfilled. "It may well be that it is extinction that awaits us at death, that this fundamental human desire will be frustrated".[63] This very uncertainty about our ultimate destiny shows the tragedy of life. For Unamuno,

life is a tragedy. "It is a continuous struggle against odds without any guarantee of ultimate victory".[64] Nevertheless, Unamuno counsels us to revolt against the idea of extinction at death. He admonishes that we should resist and fight against it by living in such a way as to deserve immortality; so that if in the end it is denied us and we are made to face extionction at death it would be an unjust fate! "If it is nothing that awaits us, let us make an injustice of it: Let us fight against destiny even though witout hope of vitory".[65]

The idea that human life is tragic is a view strongly canvassed by most absurdist philosophers. In fact, for most absurdists, human life is meaningless; the world is a fluke; man is rubbish and history is bunk! For such thinkers like Schopenhauer and the contemporary existentailsits, it is impossible to hope to achieve human well-being or happiness in this meaningless and absurd world. For them, the human condition is tragic, hence the individual should just accept and clearheadedly acknowledge such evils as death. These philosophers do not pretend to offer us the consolation of belief in a providential order of nature. For them, "from the standpoint of Being of Nature, the death of the individual is totally meaningless or absurd".[66] But it is thoughts like this - that human life is tragic - that make human beings to pine away and commit self-murder. And it is this, the issue of suicide, that we shall consider as we conclude this paper.

SUICIDE

The French philosopher and novelist, Albert Camus, contends as follows:

> *there is but one truly serious philosophical problems, and that is suicide. Judging whether life is or not worth living amounts to answering the fundamental question of philosophy. All the rest - whether or not the world has three dimensions, whether the mind has nine or twelve categories - comes afterwards*[67]

It is an incontrovertible fact that many people kill themselves because they feel that life is not worth-living.

For others, it is because they are overwhelmed by the quandry of their existence and life. It is for this reason that Camus concludes that the meaning of life is the most urgent of questions. All other questions pale to nothingness when compared with this fundamental of all questions. 'Is life worth living or not?' If it is not, should we end it up by commiting

suicide? Individuals and societies differ in their answer to this question.

In ancient Greece, the people did not believe that all human life is precious or that it must be preserved at all costs. "In Sparta, for example, it was required that deformed infants be put to death - this was considered better than an unhappy life for them and their parents".[68] The Spartans adopted a similar attitude to suicide as they did infanticide. "Although the laws of ancient Thebes and Athens expressed man's natural repugnance to suicide by deprivation of funeral rites and symbols of degration, the philosophical position was not wholly opposed to suicide".[69] For example, in the case of infanticide, even though the Athenians did not require that unhealthy babies be killed, "but on the other hand there was no condemnation for the practice, either".[70]

Plato prohibited suicide with exceptions: suicide could be practiced in a situation of extreme distress, shame, poverty or affliction that cause extraordinary sorrow for the individual. Epicurus held that if life ceases to be a pleasure, the remedy for a free man was to end it. The Stoics shared the same opinion with Epicurus; they regarded it as part of human freedom that a man continued to live by his own consent. Seneca, one of the later Stoics and a Roman statesman defended this ancient Stoic view till the end of his life. As a matter of fact, in Rome, most of the ancient heroes like Brutus, Cato the Younger, Cassius, Marc Antony, etc., all committed suicide. The British philosopher, David Hume, argued vigorously that one has the right to end one's life when he or she pleases.

In traditional African society suicide was seen as a sacrilege and an offence against the gods, and the victim was often denied burial rites. In the Igbo culture for examples, the family of the victim is expected to offer sacrifices in order to appease the gods. But in the case of infanticide, "in some parts of Africa the customs were such that the birth of twins was considered an abnormality so much so that such children were either killed or allowed to die".[71] In the modern time, most of the scholars who support the morality of suicide are influenced by sympathy toward those suffering painful and incurable diseases. Perhaps no other group of people in our contemporary time indulge in the act of self-killing like the Japanese. It is a common practice among the Japanese to commit what they call 'harakiri' (suicide) at the thought by an individual that he had failed in his calling or at the commission of a disgraceful act that could bring shame to his family.

THE REJECTION OF SUICIDE

But there have been many other people who have rejected suicide as a solution to the problem of human existence. "The prohibition of suicide, or self-killing, can be looked upon as a matter of natural aversion, primitive superstition, religious belief, or philosophical argument".[72] For example both Socrates and Aristotle rejected suicide as a crime against the gods.. However, Socrates allowed that in the case of unavoidable necessity, like when the state demands it, one could take his own life. This explains why he took his own life at the instigation of the state. But Aristotle rejected suicide with no exceptions. But "it seems that the earliest rejection of suicide in Jewish thought was by Josephus, the commander of a defeated army. His soldiers wished to kill themselves to avoid surrender, but Josephus opposed them.

His two main arguments were that suicide is a crime remote from the commom nature of a ll animals and that the soul is a deposition received from God, so that a man acts wickedly in casting it from his body".[73] Christians reject suicide by appealing to the sixth commandment, arguing that it is a great sin against God - a sin akin to murder - or as St. Aquinas said, to commit suicide is to act contrary to natural inclination and to usurp the power of God.

People commit suicide for different reasons. For some it could be because of one anguish or another. For others it could be bacause of the belief that the world has no meaning. And as we have shown in this essay, the existentialist thinkers more than any others argue that the major task of philosophy should be on the question of human existence and of the meaning of life. All the existentialist philosophers without exception, believe that life taken on its own has no meaning. For them, "to fail to question the meaning of the spectacle of life is to condemn both ourselves, as individuals, and the whole world to nothingness:.[74] The ghastly problem of suffering, anguish and death make the world to be meaningless. Above all, the apparent 'silence' and unconcern of Heaven to human suffering, the emptiness and nothingness, or, in the word of Jean-Paul Sartre, the absurdity which stems from man's realization of his own contigency and the facticity surrounding him - all these are factors that make human existence opaque.

SUICIDE AS AN INANE GESTURE

But the existentialists reject suicide as a solution to human problems. Suicide, for the existentialist philosophers, is no real solution to the prob-

lems of the absurd "for if the absurd results from the clash between human demand for clarity and justice and the unreasonalbe silence of the world, it cannot be resolved by destroying one term in the polarity which gives rise to the problem. For man to commit suicide, will amount 'to consent to his own defeat', in the desperate leap out of the absurd into the spurious relief of nothingness; he repudiates himself, he consents to his humiliation, himself becomes the agent of it, and, is thus succumbing to his impotence, abdicates his humanity".[75]

For Albert Camus, to commit suicide is to deal with absurdity simply by suppressing one of the two poles - the human being and the world - that together produce tension of the absurdity of the human condition. Suicide to Camus is an admission of incapacity, and such admission is inconsistent with that human pride to which Camus openly appeals.

Like Schopenhauer who pondered the same problems and concluded that suicide would merely play into the hands of the perfidious will to live. Camus decided against such an inane gesture. For self-slaughter merely cancels the conscious revolt and silences the voice that protests against injustice and senselessness; it actually consents to absurdity. Revolt, not suicide, is the one courageous protest against the absurd.

Accordingly Camus argues that 'there is nothing equal to the spectacle of human pride'. Only by going on living in their own absurdity can human beings achieve their full stature. The fact that life is meaningless does not mean that it is not worth living. But 'on the contrary, it will be lived all the better if it has no meaning'

"For existential philosophers the central question of philosophy, and for life, is the meaning of human existence. Some existential thinkers such as Gabriel Marcel, Nicholai Berdyaev, and the nineteenth-century precursor of existentialism Soren Kierkagard, respond to the question of life's meaning from the context of the tradition viewpoint of the Judeo-Christian religious tradition. Others such as Jean-Paul Sartre and Albert Gamus have worked out the meaning of human existence in a completely nontheistic context".[76]

The existentialists try to meet the need of the age and of man. They try to show the predicament of his anguish and aspirations. Existentialist philosophy "pays heed to the mood, catastrophies, and projects which are usually passed over by academic philosophies. Instead of retreating to a realm of eternal verities or of scientific methodology, it hugs close to the terrain of ordinary living".[77] Existentialist philosophy encourages man to

fight against evil and revolt against the perfidious nature that weighs him down. It rejects suicide and sees it as an admission of cowardice and a reputation of that spectacle of human pride which confers dignity on man even in the face of the absurd.

CONCLUSION

In concluding this essay, perhaps what remains to be said is that life can still be lived well even in the midst of the absurd or the seeming meaninglessness in the world. Perhaps Kai Nielsen was right in his admonition that what needs to be done is for us to struggle to make life in this world 'a social reality in all the ramified ways that need to be done'. It was perhaps this feeling that informed M.T. Brackbill when he wrote a peem which began and ended with the words, "Lord, I like it here"[78] Even in the face of the so called absurdity of human life, many of us will be as quick as M.T. Brackbill in making the refrain: 'I like it here' - and be 'here' we mean this persent world!

References

David Watson, Fear No Evil: A personal Struggle with Cancer (London, Hodder and Stoughton, 1984) P. III.

1 Paul Edwards, "My Death", The Encyclopedia of Philosophy. Vol. 5, P. 416.
2 Thomas Nagel, "Death", in James Racheals (ed.), Moral Problems: A Collection of Philosophical Essays (New York, Harper and Row,
3 1975). P. 401.
4 Albert Camus, Caligula and Cross Purpose (England, Peniguin Books, 1965). P. 34.
5 Ibid., P. 41.
6 Robert G. Olson, "Death", The Enoyclopedia of Philosophy, Vol. 2, P. 307.
7 Thomas Nagel, Op. cit.
8 Ibid.,
9 Ibid, P. 402.
10 David Stewart and H. G.ene Blocker, Fundamentals of Philosphy (New York, Macmillan Publshing Co., 1987). P.344.
11 James Collins, The Existentialists: A critical Study (Chicago, Henry

Regnery Co., 1952.). P.3

12 Thomas Nagel, Op. cit.

13 Ibid.

14 J.I. Omoregbe, A Simplified History of Western Philosophy (Lagos, Joja Educational Research & Publ. Ltd., 1991). P. 52-53.

15 Martin Heidegger, Being and Time (Oxford, Basil Blackwell, 1973). P.289.

16 Jean-Paul Sartre, Being and Nothingness (New York, Methuen and Co. Ltd. 1956). P. 545.

17 John Hick, "The Problems of Evil", in Paul Edwards and Arthur Pap (ed), A Modern Introduction Philosophy (New York, The Free Press, 1973). P. 463.

18 David Stewart and H. Gene Blocker, Op. cit., P. 341.

19 Lance Morroy, "Evil" in Time, June 10, 1991, P. 40.

20 Paul Badham, "God, the soul and the Future Life', in Stephen T. Daris (ed), Death and Afterlife London, Macmillan, 1989). P. 43.

21 John Hick, Op. cit.

22 Ibid.

23 Albert Camus, Lyrical and Critical trans. by Philip Thody (London, Hamish Hamilton, 1967). P. 19.

24 Paul Badham, Op. cit.

25 From the Kokinshu, translated by Arthur Waley, in Anthology of Japanese Literature, edited by Donald Keene (New York, Grove Press, 1955) P.77.

26 Benjamin Disraeli, qouted in Arhtur G. Mc Phee's Traveling Light (Grand Rapids, Michigan: Zondervan Publishing House, 1979). P. 59.

27 See The Philosophical Imagination, edited by Raziel Abelson, Marie-Louise Friquegnon and Micheal Lockwood (New York, St. Martin's Press, 1977). P. 18

28 Ibid, P. 17.

29 Norman St. John-Stevans, quoted by Glanville Williams in G. Williamson "Suicide", The Encyclopedia of Philosophy Vol. 8. P. 45.

30 Bertrand Russell, History of Western Philosophy (London, George Allen and Unwin Ltd., 1948). P. 384

31 Joseph M. de Torre, Christian Philosophy (Philippines, Vera-

Reyes, Inc., 1981). P215.

32 Raziel Abelson (et al), Op.. cit., P. 19.

33 Ibid.

34 John Hick, Op. cit., P.464.

35 Migeuel De Unamuno, quoted by J.I. Omoregbe in "What is God?: ACritical Inquiry", The Nigerian Journal of Philosophy. Lagos, Vol. ", Nos 1 & 2, 1983, P.20.

36 B.Z. Copper, The Idea of God (The Hague, Martinus Nijhoff, 1952.) P.111.

37 Micheal Green, You Must Be Joking (London, Hodder and Stoughton, 1976). P.29.

38 Ibid.

39 J.I. Omoregbe, "What Is God: A Critical Inquiry", The Nigerian Journal of Philosophy. Op. cit.

40 Ibid, P. 20-21.

41 Ibid, P.21.

42 Cyril Richardson, "The Ontogocial Trinity: Father and Son", in Religion in Life, vol. xxviii, P.15, quoted by J.I.Omoregbe, Ibid:, P.21.

43 Kai Nielsen, "The Faces of Immortality", in Stephen T. Davis (ed), Death and Afterlife (London, Macmillan, 1989). P.26.

44 R.G. Olson.Op. cit.

45 Ibid.

46 Ibid, P. 308.

47 Ibid, P. 307.

48 E.M. Albert, T.C. Denise and SP. Peterfreund (ed), Great Traditions in Ethics (New York, Van Nostrand Reinhold Co, 1969)P. 64.

49 R.G. Olson, Op. cit., P.308.

50 Ibid.

51 Ibid.

52 See Paul Edwards. Op. cit., P.416.

53 Ibid.

54 Ibid.

55 Taken from Arthur G. Mc Phee's, Traveling Light (Grand Rapid, Michigan" Zondervan Publishing House, 1979). P. 41-

56 42.

57 R.G.Olson. Op. cit., P. 309.

Jean-Paul Sartre, Op. cit., P.545.

58 Kai Nielsen Op.cit., P. 19-20.
59 Ibid, P.21.
60 John Hick, "A Possible conception of Life After Death", in Stephen T. Davis (ed) Death and Afterlife, Op. cit., P.187.
61 Kai Nielsen, Op. cit., P.2.
62 Ibid.
63 See J.I. Omoregbe, A Simplified History of Western Philosophy (Lagos, Joja Educational Research and Publ; Ltd., 1991). P.66.
64 Ibid.
65 Ibid.
66 R.G. Olson, Op. cit., P. 308.
67 Albert Camus, The Myth of Sisyphus and other Essays (New York, Random House, Inc., 1955). P.3.
68 James Rachels, "Euthanasia", Matters of Life and Death: New Introudctory Essays in Moral Philosophy, edited by Tom Regan (New York, Random House, 1980). P.32.
69 Glanville Williams, "Suicide", The Encyclopedia of Philosophy Vol. 8, P. 43.
70 James Racheals, Op. cit.
71 G.S.Sogolo, "Permissible Infanticide", The Nigerian Journal of Philosophy, University of Lago, Vol. (Nos 1 and 2, 1985, P. 107.
72 Glanville Williams Op. cit.
73 Ibid.
74 Germain Bree, Albert Camus (London, O.U.P., 1971). P. 117.
75 N.A. Scott, Albert Camus (London, Bowes and Bowes Publishers Ltd., 1962). P.21.
76 David Stewart and H. Gene Blocker, Op. cit., P.344.
77 James Collins, Op. cit.
78 See Arthur G. Mc Phee, Op. cit., P.63.

GENERAL STUDIES COURSES OUTLINE

(i) GST 102: Philosophy and Logic – 2 credits

A brief survey of the scope, notions, branches and problems of philosophy. Symbolic Logic. Special symbols in Symbolic Logic. Conjunction, affirmation, negation; disjunction, Equivalence and conditional statements. Laws of thought. The method of deduction, using rules of influence and biconditionals. Quantification theory.

(ii) GST 104. History and Philosophy of Science – 2 credits

Man – his origin and nature: man and his cosmic environment; scientific methodology; science and technology in the society and service of man; renewable and non-renewable resources – man and his energy resources Environmental effects of chemicals, plastics, textiles, wastes and other materials. Chemical and radio chemical hazards. Introduction to the various areas of science and technology.

Printed by Z. Darlington & Sons Ltd.
15, Onike Rd., Sabo - Yaba