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THE RATIONALITY OF SCIENCE AND FUNDAMENTAL QUESTION OF AFRICAN BELIEFS AND PRACTICES

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ABSTRACT

Rationality is a core criterion of science. It becomes more complex when other disciplines are argued not to be rational, except they follow methodologies of science. This argument takes for granted the works of Evans Pritchard, Michael Polanyi, and others which makes a case for rationality as a relative concept that does not convey meaning in strict sense of science alone. Perhaps, the demarcation between science and other disciplines brings to question the rationality of the other disciplines including African beliefs and practices or philosophy. The rationality character of science is itself contestable with respect to the views of Popper, Kuhn, Lakatos, Feyerabend and others. Consequently, applying method of hermeneutics, this essay examines the rationality of beliefs and practices of African philosophy in terms of scientific requirements of rationality and concludes that the beliefs and practices of African philosophy are scientific (in the broad sense of science) and, as such, are rational. Furthermore, the essay makes the point that science alone does not enjoy character of rationality as is relative.

Keywords: Philosophy, Rationality, Science, African Philosophy, Scientific demarcation.

INTRODUCTION

With conversation of Ogotemmeli and Graiule (Griaule 65), there arose a series of debate among scholars whose concern was analysis and understanding of African systems of thought. This debate can be traced to Peter Winch's 1964 article "Understanding a Primitive Society" (Winch 307-324) and Robin Horton's famous paper "African Traditional Religion and Western Science." (Horton 50-71). The two publications have since cause a protracted debate on definition and nature of rationality, exposing and contrasting long lists of what are considered to be the characteristics not only of African traditional thought but of traditional thought in general, with the characteristics of Western scientific thinking. The debate, according to Masolo, "has attracted scholars from as far afield as social anthropology, sociology, epistemology, and philosophy of science" (Masolo

124). On that note, reference are made to works of scholars like Levy-Bruhl, Levi-Strauss, Evans-Pritchard, as well as the influential works of Karl Popper, Thomas Kuhn, Richard Rorty, Michael Polanyi, Kwasi Wiredu, and Peter Bodurin. This debate can also be seen in the argument between Peter Winch and Alasdair MacIntyre over definition and differentiation of three important notions which have become major concepts in the study of knowledge and its various manifestations. The three notions are rationality, translation, and commensurability. However, over time the various contending positions of the debate have been reduced to Rationality and Relativism with translation been a matter of conceptual differentiation.

Thus, this essay takes its root from the debate, arguing that science is not superior to other fields of study. The essay adopts the method of hermeneutics to interpret some key texts and makes a case for pluralism and relativism of rationality. Consequently, it considers science in its broad sense as a body of knowledge and African philosophy as a science.

CONCEPTUAL CLARIFICATION

For clarity of discussion, there are basic concepts to define. And they include science and rationality. What is science or what do we mean when we say a piece of work is scientific? Science may be defined as knowledge based on truth, which appears as fact obtained by systematic study and precise observation. This means that to be scientific is to be unsentimental, straight thinking, correct, rational, rigorous, and exact. Etymologically, science is derived from the Latin word *scientia*, meaning "knowledge", it is a systematic enterprise that builds and organizes knowledge in specified way (Omonzejele 41).

Rationality does not enjoy a univocal definition, according to Jesus Mosterin, for example, rational is an optimizing strategy, humans, for him, are not rational by definition, but they can think and behave rationally or not. For him, there are theoretical and practical rationality (Rationality Today 2). Thus, to be rational is to be agreeable to reason, sensible, to have a sound judgment. According to Danny Frederick, rationality is essentially connected with norms. And it is also the case in Western philosophy that these norms are prescriptive. It leaves no scope for choice in matters of thought, belief, inference and behaviour. "On this pervasive view" according to Frederick, "rationality dictates: either one accepts, believes, infers or does what rationality says one should, or one is irrational" (Frederick 1). This informs this attempt of Frederick to argue that this authoritarian concept of rationality is absurd. And as such he tries to contrast it with a libertarian concept of rationality (Frederick 2). According to Frederick, Western philosophers have propounded views according to which reason leads a person to beliefs that he must have to do actions that he must perform, if he is rational. Thus, Frederick writes:

> In contemporary analytic philosophy the dominant views are still that, in matters of knowledge, rationality dictates what to

> believe and what to infer, and that, in practical matters, it dictates what action to perform or intend or desire; but some of the dictates may be relativised to other beliefs, values, desires or intentions of the person concerned (Frederick 2).

It is on this ground that science builds its rational inquiry on logical inferences through deductive and inductive process. However, the model of induction has been challenged by Hume and the idea of deductive nomological model of explanation (a view that Hempel advocated) has met with objections from scholars like Wesley Salmon. The idea of rationality of man entered philosophical discourse through Aristotle and since then it has been used as the defining quality of man. With these definitions, let us examine the claim of science as a rational discipline and the attack on such claim.

THE NOTION OF RATIONAL INQUIRY IN SCIENCE

The image that the scientific community likes to project of itself, and indeed the image that most people accept of that community is that of rationality par excellence. The scientific community sees itself as the very paradigm of institutionalized rationality. It is taken to be in possession of something, the scientific method, which generates 'logic of justification'. That is, it provides a technique for the objective appraisal of the merits of scientific theories. In addition it has even been claimed by some that scientific method includes a 'logic of discovery', which is to say it provides devices to assist the scientist in the discovery of new theories. And in the noble pursuit of some worthy aim (variously characterized as truth, knowledge, explanation, etc.) the members of the community dispassionately and disinterestedly apply their tools, the scientific method, each application of which takes us a step on the royal road to the much esteemed goal.

The overwhelming popularity of this image of science arises in part at least from the great successes of recent science, particularly physics. How else are the successes of 'hard' science to be explained except on the assumption that there is some privileged method and a community that disinterestedly applies that method? That is, it is assumed that there must be something special about the method and the community in order to account for the superior achievements of science. However this image of science has come under attack from various historians, sociologists and philosophers of science.

It was on this note that Thomas Kuhn rejected the traditional picture of science as progressing steadily and evenly toward evenly greater knowledge, arguing instead that science changes by a series of revolutions, in which old pictures or paradigms lose out to new ones (Kuhn 62). In Kuhn's view it is quite unclear whether there is one-direction progress in science, since the change from old paradigms to new ones is so great that there is no common ground between them on which to base a judgment. Kuhn's doctrines have generally been

interpreted to give rise to relativism – the theory that there are no truths or, at least, nothing can be asserted to be true independent of some points of view, and that disagreement between points of view are irreconcilable. The result of course is to deprive science of a position of strength from which it can defend its findings as more justified than those of pseudo-science (Bortolotti 23). It also undermines the claims of the so-called "hard sciences" – physics and chemistry – to greater authority for their findings, methods, standards of argument and explanation, strictures on theory-construction, than can be claimed by "soft sciences" and the humanities. Post-modernists and deconstructionists took much support from a radical interpretation of Kuhn's doctrines, and from other fashionable philosophies, for the relativism they embraced.

Among sociologists of science especially, a "strong program" emerged to argue that the same factors which explain scientific successes must also explain scientific failures, and this deprives facts about the world – as reported in the results of observations and experiments – of their decisive role in explaining the success of science. According to Alex Rosenberg (170), these doctrines had a liberating effect on the social and behavioural sciences and other disciplines which had hitherto sought acceptance by aping scientific methods but no longer felt the need to do so. The sociological and even more political focus of science revealed its traditional associations with the middle classes, with capitalism, its blindness towards the interests of women, and indifference to minorities. Philosophers of science especially feminists among them, have increasingly been sensitive to these facts about science's past and present (Rosenberg 170). This has led to insights about how science should be pursued hereafter.

The interaction of the naturalism that Quine inspired, and the reading of the history of science which Kuhn provided, together had a profound unsettling impact on the philosophy of science. It shook literally centuries of philosophical confidence that it understood science. This sudden loss of confidence that we know what science is, whether it progresses and how it does so, and what the sources of its claims to objectivity can be, left an intellectual vacuum. It is a vacuum into which many sociologists, psychologists, political theorists, historians and other social scientists were drawn. One result of the heated and highly visible controversy which emerged was to make it apparent that the solution to problems in the philosophy of science requires re-examination of the most fundamental questions in other compartments of philosophy, including epistemology, metaphysics, the philosophy of language, and even portions of moral and political philosophy (Rosenberg 171).

The result of Kuhnian incommensurability thesis is a picture of science not as the succession of more and more complete explanations of a wider and deeper range of phenomena or even the persistent expansion of predictive power and accuracy over the same range of phenomena. Rather the history of science is more like the history of fashions, or political regimes, which succeed one another not because of their cognitive merits, but because of shifts in political power and social influence. According to Rosenberg, this conception of

the history of science is an invitation to epistemic relativism (Rosenberg 171). It denies that there can be objective truth about the way the world is, independent of any paradigm, nor consequently any way to compare paradigms for truth, objectivity or epistemic warrant. Kuhn was ambivalent whether to plead guilty to the charge of epistemic relativism among paradigms.

But the situation may be even more fraught than Kuhn supposed. For there were philosophers and other eager to transform Kuhn's claims about the broadest paradigms that characterize century-long epochs of normal science, into the incommensurability of individual scientific theories even the ambit of normal science. And Quine's fundamental philosophical arguments gave them the resources to do so. Most influential among these philosophers was Paul A. Feyerabend. Adopting Kuhn's insights about the irreducibility of Aristotelian mechanics to Newton's theory, and Newtonian mechanics to Einstein's, Feyerabend argued that the impossibility of translating the key concepts of impetus into inertia, or absolute mass into relative mass, reflects a barrier to reduction among all theories. The reason is the holism about meaning that Quine's insights spawned. The meaning of a theoretical term is not given by its connection, direct or indirect, to observation, because theory does not meet observation word by word or even sentence by sentence, but only as a whole. So, meanings are theoretical. The meaning of a theoretical term is given by its place in the structure of the theory in which it figures. Denying this holistic claim about meanings requires an entire theory of meaning, or at least a reason objection to Quine's attack on meaning. When added to the denial of an observational language that could frame statements about data, statements that might enable us to choose between theories, the result is what Feyerabend praised as "methodological anarchy". He called it methodological anarchy because the result is that there is no cognitive basis to choose between theories. And Feyerabend praised this outcome because he held that such anarchy stimulates scientific originality and creativity (Rosenberg 172). Feyerabend concluded that "anything goes." If this is true, then the question emerges, why has science taken the particular route that it has over time? For the relativists the answer cannot be that the history of science is the history of inquiry "truth tracking", changing in the direction of a closer and closer approximation to the truth about the world. Rosenberg argued that the way the world is, independently of science, can have no role in determining the shape of particular sciences or science in general. That is because there is literally no way the world is, independent of science. And if the history of science is not explained by the dispassionate study of the way the world is by objective and disinterested scientist, it must, like all the history of all other social institutions, be the outcome of social, political, psychological, economic and other "non-cognitive" factors. So to understand science, the particular sciences, and the nature of scientific change, relativists argue, we must do social sciences (Rosenberg 172).

There have also been those that argued for the displacement of philosophy by sociology as our source for understanding science. The task of the "strong program" is to explain both scientific successes and failures on the same basis, because for them what distinguishes those scientific developments that are accepted as advances from those rejected as mistaken cannot be that the former reflect the way the world works and the latter do not, both must be explained the same way. David Bloor described this as the "symmetry thesis" (Rosenberg 173). These sociologists and social scientists sought to study the close details of scientific work, and concluded that like other social products, scientific agreement was "constructed" through "negotiation" between parties whose interests are not exclusively or perhaps even predominantly directed at describing the way the world works. Rather, their interests are personal advancement, recognition, material reward, social status and other benefits which bear no connection to the declared, publicly stated, advertised objective of science: the disinterested pursuit of truth.

According to Rosenberg, there are further critics of scientism beyond historians and sociologists of science and the writers of "New Age" trade books (Rosenberg 174). Even scholars in the humanities, professors of English, French and kindred disciplines, have sought to "de-center" science, and to treat its products as "texts" in the way such scholars would treat Charles Dicken's *Great Expectation* or Chinua Achebe's *Things Fall Apart*. The reason they offer for equivalent treatment of scientific and literary works, including those labeled by their authors as "fiction", is of course that in the end the difference between works purporting to describe the world and those with other aims is purely social construction. These scholars often described themselves as "post-modern", a name to be contrasted with "modernism" (Rosenberg 174).

The feminists also contested the character of science. They were committed to the improvement of science as a social institution. Most of them begin their examination of science from epistemological insight, sometimes called "standpoint theory". This theory begins with the uncontroversial thesis that there are certain facts relevant to the assessment of scientific theories which are only detectable from certain points of view or standpoints (Rosenberg 176). Sometimes these points of view or standpoints involves using a certain apparatus, sometimes these philosophers argue, it requires being a woman, or a member of a social class, or racial minority, or having a certain sexual orientation. Some of them are of the opinion that physical or chemical facts are missed by failure to attend to the findings from a woman's or other marginalized standpoint. Influenced by Quine and Kuhn, the standpoint theorists do not exhaust feminist philosophy of science and in fact its sternest critics have included feminist philosophers of science, who honor the aspirations of standpoint theory and seek to attain them for other premises, in particular, ones congenial to the empiricist orthodoxy of contemporary non-feminist philosophy of science. The aspirations of standpoint theory in question include those of emancipation, not just of women, but of all who have suffered

from the very failures of "objectivity" and "disinterestedness" that science officially may extol but scientists actually falls short of (Rosenberg 180).

Though science is believe to search for significant truths, the feminists have argued that the history of science is full of inquiries about statements deemed to be significant because of values, interests, objectives of the men who dominated science; similarly, many lines of inquiry are absent from its history because on these same values, the questions they explored were insignificant. According to Rosenberg, example of this can be seen in the history of investigation of mating strategies in evolutionary biology. Though biologists ignored female reproductive strategies in infra-humans, when it came to contraception, the focus of pharmaceutical intervention was on women (Rosenberg 184). On the other hand, in the treatment of depression (a disorder more frequent among women), pharmaceuticals were tested on male samples only, owing to the assumption that differences between male and female physiology were insignificance. Somewhere in the cognitive background of these decisions about how to proceed in science, there were value judgments, ones which neglected the interests of women. Thus, the feminist philosopher of science merely insists that we order inquiry on the basis of significance to all of us. Similarly, the feminist philosophers rejected the centrality of prediction, and especially control to the scientific enterprise. The suggestion that science optimally should proceed in this way reflects what they hold to be masculine biases which are also reflected in the subordination of women and other marginalized groups. The methodology of prediction and control fails to gain the knowledge that might derive from a more cooperative relationship with the objects of scientific study. Before digressing further let us examine what Karl Popper has to say about the image of science.

POPPERIAN ACCOUNT OF THE SCIENTIFIC IMAGE

According to Popper, truth is the aim of science. But the scientific condition is one of ignorance. In *Objective Knowledge*, he writes: "our main concern in science and in philosophy is or ought to be the search for truth" (Newton-Smith 46). Thus the aim of scientific activity is the production of explanatory truths. But while truth is the aim, ignorance is the game. Popper repeatedly declares that there is no criterion of truth.

Popper in keeping with the non-rationalist derives the positivists doctrine of an epistemologically privilege class of observational statements. Nonetheless there is a class which has a role to play within the Popperian account of scientific methodology. Such statements which he calls basic statements, are characterized not epistemologically but in terms of their form and their role. On the method of science, Popper holds that no set of observations no matter how selected, can increase the probability of a generalization which entails them. Popper believes that there is neither a psychological nor a logical induction. Only the falsity of the theory can be inferred from empirical evidence and the

inference is a purely deductive one (Newton-Smith 49). If all inductive argumentation is precluded what is the method of science? It is simply that of bold conjectures, and the critical search for what is false in our various competing theories (Newton-Smith 49).

Popper's logic of scientific discovery or methodology is a theory of scientific rationality more specifically, a set of standards for scientific theories (Lakatos 140). For Popper, the logic of discovery or methodology consists merely of a set of tentative rules for the appraisal of ready articulated theories. All the rest he sees as a matter of empirical psychology of discovery outside the normative realm of the logic of discovery. Popper's logic of discovery contains "proposals", "conventions" about when a theory should be taken seriously (when a crucial experiment could and indeed has been devised against it) and about when a theory should be rejected (when it has failed a crucial experiment). Popper's logic of discovery gives for the first time in the context of a major epistemological research programme, a new role to experience in science: scientific theories are not based on established or probabilified by facts but rather eliminated by them. For Popper progress consists of an incessant ruthless revolutionary confrontation of bold speculative theories and repeatable observation and of the subsequent fast elimination of the defeated theories. The method of false theories by observation statements, conjectures are boldly put forward for trials to be eliminated if they clash with observation.

FEYERABEND'S ANARCHISTIC THEORY: ANYTHING GOES

Paul K. Feyerabend makes a case that none of the methodology of science that has so far been proposed is successful. He argues that methodologies of science have failed to provide rules adequate for guiding the activities of scientists. He suggests that given the complexity of history, it is most implausible to expect that science be explicable on the basis of a few simple methodological rules. He writes:

> The idea that science can, and should be run according to fixed and universal rules, is both unrealistic and pernicious. It is unrealistic because it takes too simple a view of the talents of man and of the circumstances which encourage or cause their development… it makes science less adaptable and more dogmatic … case studies such as those reported in the preceding chapters speak against the universal validity of any rule. All methodologies have their limitations and the only "rule" that survives is "anything goes" (Feyerabend 295-296).

If methodologies of science are understood in terms of rules for guidance of the choices and decisions of scientists, then it seems that Feyerabend's position is correct. Given the complexity to any realistic situation within science and the unpredictability of the future as far as the developing of science is concerned, it is unrealizable to search for a methodology that dictates how science should proceed. This same line of thinking appears in Lakatos because

his methodology does not provide rules for theory or programme choice. *The Methodology of Scientific Research Programme*s provides standard that aid the scientists in evaluating the historical situation in which he makes his decision; it does not contain rules that tell him what to do (Chalmers 135). This is while in his *Against Method* Feyerabend claimed that Imre Lakatos's philosophy of research programmes is actually "anarchism in disguise" because it does not issue orders to scientists and as such Feyerabend playfully dedicated his *Against Method* to "Imre Lakatos: Friend and fellow-anarchist". Scientists, then, should not be constrained by the rules of the methodologist. In that sense, anything goes.

Feyerabend argues further that in some cases the fundamental principles of two rival theories may be so radically different that it is not possible even to formulate the basic concepts of one theory in terms of the other with the consequences that the two rivals do not share any observable statements. The two rival theories will be incommensurable i.e. cannot be compared. Feyerabend uses the example of the relationship between classical mechanics and relativity theory to buttress his point. According to him, this idea when push forward will lead to subjective aspect of science thereby negating the objective claim of science.

> What remains (after we have removed the possibility of logically comparing theories by comparing sets of deductive consequences) are aesthetic judgments of taste, metaphysical prejudices, religious desires, in short what remains is our subjective wishes (Feyerabend 253).

Another important aspect of Feyerabend's view of science concerns the relationship between science and others forms of knowledge. He points out that many methodologists takes for granted without argument, that science (or perhaps physics) constitutes the paradigm of rationality. His quarrel with the defenders of science as superior to others forms of knowledge is that they fail to adequately investigate those other forms of knowledge. Thus, he rejected the superiority of science over other forms of knowledge.

The hope of Feyerabend is that a perusal of his *Against Method* will show us that there is no such thing as scientific method. Science, it is argued is just one tradition among many. It is privileged neither in terms of methods nor in 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 tradition which Feyerabend wishes to see brought from this equal access are astrology, witchcraft and traditional medicine (Newton-Smith 125). The freedom given to the individual is too much. He believe that institutionalization of science in our society is inconsistent with the humanitarian attitude. In schools for example, science is taught as a matter of course "Thus while an American can now choose the religion he likes, he is still not permitted to demand that his children learn magic rather than science at

school. There is a separation between state and church; there is no separation between state and science" (Feyerabend 299). What we need to do in the light of this, writes Feyerabend is "to free society from the strangling hold of an ideologically petrified science just as our ancestors freed us from the strangling hold of One True Religion!" (Feyerabend 307). The separation of church and state should therefore be supplemented by the separation of science and state, in order for us to achieve the humanity of which we are capable. Setting up the ideal of a free society as "a society in which all traditions have equal rights and equal access to the centres of power" (Feyerabend 9). Thus, Feyerabend argues that science is a threat to democracy. To defend society against science, we should place science under democratic control and be intensely skeptical about scientific "aspects" consulting them only if they are controlled democratically by juries of laypeople (Feyerabend 146)

John Krige regarded Popper and Lakatos as philosophers of continuous change and Feyerabend as a philosopher of discontinuity. Krige tells us that Feyerabend suggested that the lesson to be learnt from a careful study of historical events like the Scientific Revolution is that 'progress' can only be achieved in some situations by being an epistemological anarchist or preferably, a Dadaist (Krige 106-108). Dadaist he tells us believe that life will only be worthwhile when we stop taking it too seriously and free ourselves from puritanical and dedicated search for 'truth' and 'justice'. Feyerabend aims therefore was to demolished the view that genuine knowledge is embodied in One True Theory and that it will only be attained when a single point of view has been established beyond all doubt as the one and only correct account of the world.

In his *How to Be a Good Empiricist: A Plea for Tolerance in Matters Epistemological*, Feyerabend tells us that to be a good empiricist one must adopt the principle of proliferation: invent and elaborate theories which are inconsistent with the accepted points of view even if the latter should happen to be highly confirmed and generally accepted (Brody 315). The central tenet of Feyerabend's methodological anarchism is thus a demand for freedom *vis a vis* methodological rules. And of course as Feyerabend points out, it is not really a methodological principle at all. It is simply a crutch which can be used by those who crave the intellectual security provided by having principle which holds "under all circumstances" (Krige 116).

In his book *Science in a Free Society* as in his *Against Method*, Feyerabend defended the idea that there are no methodological rules which are always used by scientists. He objected to any single prescriptive scientific method on the grounds that any such method would limit the activities of scientists, and hence restrict scientific progress. In his view science would benefit from a dose of theoretical anarchism which he thought was desirable because it was more humanitarian than other systems of organization by not imposing rigid rules on scientists. Perhaps, Feyerabend was attaching the consistency criterion. He is of the view that to insist that new theories be consistent with old theories gives an

unreasonable advantage to the older theory. He makes the logical point that being compatible with a defunct older theory does not increase validity or truth of a new theory over an alternative covering the same content. That is, if one had to choose between two theories of equal explanatory power, to choose the one that is compatible with an older, falsified theory is to make an aesthetic, rather than a rational choice.

He was also very critical of the falsificationist theory. He argued that no interesting theory is ever consistent with all the relevant facts. This will rule out using a naïve falsificationist rule which says that scientific theories should be rejected if they do not agree with known facts. Feyerabend criticized positivism and defended realism which for him is desirable because it demands proliferation of new and incompatible theories, which will lead to scientific progress (Preston 144). This progress comes through theoretical pluralism, through allowing a plurality of incompatible theories.

Speaking on Feyerabend, John Preston, said that it was his "*tour de force*, the 1975 book *Against Method* which got him branded an "irrationalist". Feyerabend, Preston wrote "thus saw himself as having undermined the arguments for science's privileged position within culture, and much of his later work was a critique of the position of science within Western Societies" (Preston 145). Because there is no scientific method, we can't justify science as the best way of acquiring knowledge. And the results of science don't prove his excellence, since these results have often depended on the presence of nonscientific elements; science prevails only because "the show has been rigged in its favour" (Feyerabend 102) and other traditions, despite their achievements have never been given a chance.

However, Feyerabend as earlier said holds that new theories came to be accepted not because of their accord with scientific method, but because their supporters made use of any trick – rational, rhetorical or ribald – in order to advance their course (like the case of Galileo and the Church). Without a fixed ideology, or the introduction of religions tendencies, the only approach which does not slow down progress (using whichever definition one sees fit) is "anything goes": "anything goes is not a 'principle' I hold…but the terrified exclamation of a rationalist who takes a closer look at history" (Feyerabend 102). What can easily be seen, and in my experience frequently is seen, as the message of Feyerabend's recent writings, is that everyone should follow their individual inclinations and do their own thing. If this view is adopted, it is liable to lead to a situation in which those who already have access to power will keep it. As John Krige has put it, in a way that I wish I had thought of myself, "anything goes… means that, in practice, everything stays" (Krige 142).

Feyerabend argues in his *Philosophical Papers* that a plurality of competing theories is desirable for the progress of science. In his later work he criticizes rationality drawn from the philosophy of science – notably those of Popper – both as an account of the growth of science, which he described in

Against Method as an 'epistemological anarchism' (Mautner 198) stresses the positive role of scientists whose actions departed from the methods recommended by philosophers of science. He championed cultural pluralism and the diversity of forms of knowledge against those who claim a privileged position for science. Thus, his works are consciously written against the very enterprise of a philosophy of science understood as the attempt to lay down rules for scientific method.

Feyerabend has advanced interesting and original criticisms of the views of other people; his writing is lively and provocative and brings an immense range of knowledge and a lively imagination to bear on the subject under discussion. However, his challenge is taken to the point of disavowing any systematic position. This renders his views difficult to characterize, and may also have the consequence of protecting his substantive views from criticism.

SCIENCE, AFRICAN PHILOSOPHY, BELIEFS AND PRACTICES

In *Witchcraft, Oracles and Magic,* Evans-Pritchard describes and compares the practice of and the notions within the poison oracle *benge* to scientific notions and experiments which are carried out essentially to ascertain hidden things of the present and to corroborate it with other western scientific thinking. Evans-Pritchard's argument is that although the Zande method and process of corroboration by means of the poison oracle are rational from the point of view of consistency, they are, however mistaken from the point of view of the scientific (context-independent) notion of reality (Evans-Pritchard 37). Winch, in contrast, is of the view that there is no reality independent of the language games and forms of life of a given language community (Polanyi 287). Michael Polanyi argues that the reason for the parallels between the attitudes which guide scientific practice and those which the Azande use in the administration of *benge* is that, universally, "our most deeply ingrained convictions are determined by the idiom in which we interpret our experience and in terms of which we erect our articulate systems" (Masolo 126). Thus, Masolo is of the view that the position of Evans-Pritchard was challenged by Polanyi and Winch. This position is that Azande beliefs about witchcraft, magic, and oracles are logical but mistaken, this position was based on the notion of reality in which scientific objectivity plays a major part. But according to Polanyi and Winch, science is itself no less a form of idiom or social reality than is a religious worldview on the basis of which we are capable of making many inferences. Some assertions in African philosophy such as those we have in the Nuer saying that 'twins are bird' are only understandable within the linguistic context and rationality of the Azande people. In short the language factor in philosophy should not be trivialized in rationality discourse (Presbey 7-17).

In his edited volume of essays entitled *Rationality* (Wilson 70), Bryan Wilson et al argued against Winch and agreed with Evans-Pritchard that the cognitive skills of Western science are superior to traditional skills of knowledge. Thus, some scholars came to argued that the West was a highly

rational place, while traditional societies lived a more poetic, mystical, less rational and more restricted world of thought. The above conviction was greatly defended by Horton's "African Traditional Religion and Western Science" *Modes of Thought* and Hollis and Luke's *Rationality and Relative Models of Man* which is itself based on a specific and super-realist notion of humankind, science, and rationality. The theme they defend is that man is a natural creature in a rational world of cause and effect, and that with the aid of reason we can master nature, manipulate society, change culture, and indeed shape our selves. This position holds a conception of rationality that identifies logical consistency and coherence in the explanation of reality as its minimal characteristic. The truth of this "reality", they believe is established by science. This school of thought sees rationality as one based on universally valid rules of logic and inference.

These rules according to Hollis are laws of identity, non-contradiction and *modus ponen*. Hollis argues that these rules render it possible to make trans-cultural and comparative judgments as to the degree of rationality and irrationality manifest in a belief or action system. Thus, Hollis rejected the theory of relativism of truth or knowledge. They hold that there is only one reality whose relations are objectively discernible by science. Because of this, propositions about this reality must be guided by the universal rules. It was on the basis of this realist position that even Evans-Pritchard held the notion that there was a context-independent notion of reality against which the rationality of Zande notions of witchcraft, magic, and oracle could be judged and be found wanting. Masolo holds that in this view of Evans-Pritchard, a rational explanation is defined in the "analytic fashion as a body of verifiable propositions relating cause to effects" (Masolo 126). This position consequently views the notions of consistency and reason as functions of scientific evidence. According to Tambiah:

> This kind of rationality has been, everyone will assent, most self-consciously formalized and systematized in the West, and the comparative question relates to the grounds and contexts in which, and the social and religious phenomena to which this conception of rationality can be used as a universal yardstick (Tambiah 115).

The rationalist therefore rejects any form of relativism of reason. Specifically, they side with Evans-Pritchard and challenge Winch's assertion that "the criteria of logic are not a direct gift from God but arise out of and are only intelligible in the context of ways of living modes of social life". Like Polanyi, Winch believes that the logicality of inference (the laws of consistency and coherence) is itself guided by such modes of social life, of which science and religion are two. Winch argues that one cannot apply criteria of logic to modes of social life as such. For him science is one such mode and religion is another and each has criteria of intelligibility peculiar to itself. He writes

> …So within science or religion actions can be logical or illogical, in science, for example, it would be illogical to refuse to be bound by the results of a properly carried out experiment; in religion it would be illogical to suppose that one could pit one's own strength against God's; and so on (Winch 310).

This position, insist Hollis and Lukes, sees only differences (pluralism) in the standards for rating reasons as good whereas they insist on ranking the standards themselves. In this view, there are three categories of answers they give in evaluation of non-Western beliefs and action. These answers reflect the positions held by the authors of the essays in Hollis and Luke's *Rationality and Relativism*. They state that apparently irrational beliefs are rational beliefs, backed by mistaken beliefs about what is really reasonable. This positions affirm the unity and superiority of science-based rationality and reject the theory of relativism of reason emerging from evidence, provided by, among others, social anthropologists, out of non-Western beliefs and practices. Challenges to this Western-type definition of rationality or to the analytic establishment generally by the proponents of pluralism have engulfed both anthropology and philosophy, bringing both into the postmodernist movement. The historical merit of the postmodernist critique arises out of its questioning of the validity of taking the Western model of rationality as the yardstick for judging others. It argues that judgments of what counts as good philosophy or good reason and ultimately conventional. According to Masolo, "these pluralists further contend that Western social science gained ground through its critical function, which is to use knowledge of other culture to examine the unconscious assumptions of Western rationality" (Masolo 127). Other culture emerged therefore as "creations" or representations of Western social science. In this sense, then, the present debate marks an important era as a period of self-critique in the social sciences and the humanities. Sometimes this conflict tends to take on political features, as suggested by A.J. Mandt or as analyzed by V.Y. Mudimbe in his *Invention of Africa*. On this ground, let us quickly examine some of the arguments leveled directly on African philosophy, beliefs, and practices within this stream of debate.

Following Masolo, the arguments leveled against African philosophy is usually discussed under the notions of language, truth and reason. On this note, Kwasi Wiredu in his "How not to Compare African Traditional Thought with Western Thought" as well as his other essays from the Akan worldview, he argued that there is no meaning of language other than in terms of what it signifies and refers to (Wiredu 14). In themselves words are sheer physical existence exactly like tables, chairs and trees. Their significance according to Wiredu is derived from the ideas which are connected to what which they signify or refer. Thus, a philosopher in Wiredu's believe system must of necessity direct his search for the meaning of words only on their relationship with the objects or situations they stand for. Thus, Masolo tells us that if we try

to evaluate Graiule's description within this statement, then Wiredu would dismiss the theory as belonging not to a philosophical analysis, but to mysticism. And the latter according to Wiredu is frequently contradictory and defies the rules of meaning and the laws of logic (Wiredu 97-106). A contrast to this theory of *Nommo* is found in Robin Horton's "African Traditional Thought and Western Science". Horton observes in this essay that one central characteristic difference between traditional African worldviews and scientific theories is that the former treat words as if they are able to produce the things for which they stand. This he thinks can be seen in the recourse made by African traditional religious thought to formulating a theory of reality based on the concept human agency. Horton thought that Africans personalize the causal forces in nature in contrast to the impersonal forces operational in scientific explanations. Traditional people therefore believe in the power of words in the sense that words, when uttered in appropriate circumstances, are capable of bringing into being the events or states they stand for. It is a common magical belief of closed cultures and Horton argues further that because they lack alternative theories and are unaware that ideas can be expressed in different language without affecting them, peoples of primitive (nonscientific) societies tend to think that the words of the language they speak must have an inextricable relationship with the reality they stand for. The traditional attitude to words, says Horton, "is radically different from that of the scientist" (Horton 50-71). The scientist he says believes the power of words to rest in their explanatory and predictional functions in relation to reality. Thus, Horton's scientists reject the magician's view of words. In summing up, Horton argues that in the explanation of reality, that is, in an attempt to give a theoretical grounding for why things happen the way they do, Africans revert to spirits as Westerners revert to science. Spirits are to African traditional thought what material particles are to Western scientific thought.

Another merit of the pluralist critique according to Masolo lies right here, that it rejects reductionism of any form. The pluralists defend the theory of commensurability of or "bridgeheads" between worldviews as perspectives rather than as typologies of "modes of thought" or "cognitive styles". Jack Goody agrees with Horton's thesis that scientific thought is characteristically different from traditional thought but he however disagrees with Horton about what constitutes the essential difference between the two systems. For Horton it is skepticism toward established beliefs that distinguishes the scientists from the traditional thinker. In Goody's view Horton's argument is self-defeating. According to Goody, Africans are skeptical especially about witchcraft, divination, and similar matters (Goody 43). In a manner that may contrast with the positions of John Sodipo, Barry Hallen, and Henry Odera Oruka. Goody argues that what seems to be the essential difference however is not so much the skeptical attitude in itself but the accumulation or reproduction of skepticism. Thus, for Goody, the significant contrast, is not so much between the traditional and the scientific, or modern as between oral and the literate. But objections and

disagreement came from Odera Oruka, John Sodipo and Barry Hallen. According to Oruka, much of the knowledge that informs everyday cultural practice is the result of theoretical deliberations and negotiations between the produce of traditional knowledge which he calls sages and sage philosophers. Barry Hallen and John O. Sodipo in their book *Knowledge, Belief and Witchcraft* (1986) argue that even in the case of witchcraft there are two kinds of statement categories which ought to be made: those that belong to assertions about the material event, and those which assert witchcraft accusation (Hallen and Sodipo 98). Drawing their inspiration from Quine's theory, they say that the nature of the standing sentences is not important so long as they provide explanations which are culturally meaningful to members of the cultural system within such an account occurs. Their thesis is in corroboration of Evans-Pritchard thesis on witchcraft against the thesis of Levy-Bruhl.

The position of this paper is that those that argued that rationality is culturally universal have not play their opponents card well. Rationality is culturally relative. To be rational in African should not be compared with being rational in the West. For people's level of rationality depends on their environment (the case of the early Mesopotamia is an example to this claim). Thus we should not stand within West culture and use it as a yardstick to compare the rationality of other cultures.

CONCLUSION

From the foregoing, it is obvious that rationality should be seen as relative to communities. Though critics might want to argue that this will lead to the problem of cross-cultural understanding and incommensurability, but it can also be argued that knowledge, belief and practices are context-dependent. Thus to be rational in an African community is not the same as to be rationality in the West. One more objection to this point is the claim that which of these modes of rationality is superior? The West priding themselves as using the method of logic and science claim that with the results and fruit of their scientific investigation that they are superior to other people which they label as inferior and primitive.

However, this paper holds that the incommensurability thesis of Kuhn and Feyerabend should be taken seriously and further research into. Our position is that the culture, beliefs, knowledge, practices and rationality of the West which is built upon their scientific model of explanation is quite different from that of African, so much so that they both cannot be compared. What is needed is to use the philosophy and beliefs system of each people to solve their problems and puzzlements. That is African philosophy for African development and Western philosophy for Western development. Thus African philosophy need not be naturalistic. The methodology of western science cannot and should not be use in researches in African philosophy.

WORKS CITED

Bortolotti, Lisa. *An Introduction to the Philosophy of Science*. Polity Press, 2008.

Brody, Baruch A. ed.*Readings in the Philosophy of Science*. Prentice Hall, Inc, 1970.

Chalmers, Alan F. *What is This Thing Called Science? An Assessment of the Nature and Status of Science and its Methods,* 2nd ed. Open University Press, 1978.

Evans-Pritchard, Edward E. *Witchcraft, Oracles and Magic among the Azande.* Oxford University Press, 1937.

Feyerabend, Paul K. *Against Method: Outline of an Anarchistic Theory of Knowledge*. New Left Books, 1975.

Feyerabend, Paul K. *Science in a Free Society.* New Left Books, 1978.

Frederick, Danny. "Two Concepts of Rationality," in *Libertarian Papers* 2, 5. 2010

Goody, Jack. *The Domestication of the Savage Mind.* Cambridge University Press, 1977.

Griaule, Marcel. *Conversations with Ogotemmeli,* Oxford University Press, 1965.

Hallen, Barry and John O. Sodipo. *Knowledge, Belief and Witchcraft.* Ethnographica, 1986.

Hallen, Barry. *A Short History of African Philosophy.* Indiana University Press, 2002.

Hollis, Martin and Steven Lukes, eds. *Rationality and Relativism.* The MIT Press, 1982.

Hollis, Martin. *Models of Man.* Cambridge University Press, 1977.

Horton, Robin. "African Traditional Thought and Western Science," *Africa*, Vol. 37, Nos. 1 & 2, 1967, pp. 50-71; 155-187.

Krige, John. *Science, Revolution and Discontinuity*. The Harvester Press Limited, 1980.

Kuhn,Thomas S. *The Structure of Scientific Revolutions,* 2nd ed. The University of Chicago Press, 1962.

Lakatos, Imre. *The Methodology of Scientific Research Programmes: Philosophical Papers* Vol. 1. Cambridge University Press, 1978.

Mandt, A.J. "The Inevitability of Pluralism: Philosophical Practice and Philosophical Excellence." *The Institution of Philosophy*: *A Discipline in Crisis*? Edited by Cohen, A., and Dascal, M. Open Court Publishing Company. pp. 77-101. 1989.

Masolo, D. A. *African Philosophy in Search of Identity.* Indiana University Press, 1994.

Mautner, Thomas. *The Penguin Dictionary of Philosophy.* Penguin Books Ltd, 1996.

Mudimbe V. Y. *The Invention of Africa.* Indiana University Press, 1988.

Newton-Smith, William H. *The Rationality of Science*. Routledge & Kegan Paul Ltd, 1981.

Omonzejele, P. F. "Philosophy as a Second Order Discipline." *Philosophy and Logic: A Concise Approach*. Edited by Otakpor N. GSU, 2016.

Polanyi, Michael. *Personal Knowledge: Towards a Post-Critical Philosophy.* Harper and Row Publishers, 1964.

Preston, John. "Feyerabend." *A Companion to the Philosophy of Science.* Edited by Newton-Smith W.H. Blackwell Publishers, 2000.

Rosenberg, Alex. *Philosophy of Science: A Contemporary Introduction*. 3rd ed. Routledge, 2012.

Sogolo, Godwin. *Foundations of African Philosophy*. Ibadan University Press, 1993.

Stumpf, Samuel E. *Philosophy: History and Problems*. 2nd ed. McGraw Hall Publishers, 1975.

Tambiah, Stanley J. *Magic, Science, Religion, and the Scope of Rationality*. Cambridge University Press, 1990.

Wilson, Bryan R. ed.. *Rationality.* Harper and Row, 1970.

Winch, Peter. "Understanding a Primitive Culture," in *American Philosophical Quarterly,* No. 1, 1964, pp. 307-24.

Wiredu, Kwasi., "Mysticism, Philosophy and Rationality," in *Universitas*, Vol. 2, No. 3, 1973, pp. 97-106

Wolf, Robert P. *About Philosophy.* Prentice Hall, 1988.