

DISCUSSION

**KUHN, BARNES AND THE QUESTION
OF RATIONALITY IN TRADITIONAL
AFRICAN SOCIETY**

This paper is essentially an exposition of Barnes' book *Kuhn and the Social Science*.¹ The book is an important one in many respects. But its importance, at least, for us in Africa resides in the implicit contribution it makes to the debate on rationality. Although this is not discussed in a full-blown manner in the book, one can draw an implication on this from the book considering the fact that the group the author belongs to has contributed to a debate about rationality.² I will, therefore, use this review as a foil to make a foray into this embattled territory of the question of rationality in the African traditional thought. But I shall first situate Barnes' position in the larger context of rationality of science and his group's position before delving into the problem of rationality in African traditional thought. I need to say at the outset that I cannot deal with the vast literature written about rationality in African traditional thought but what I shall say in this review captures the essential points of those involved in this controversy.

Kuhn's book, *The Structure of Scientific Revolution* has attained something of a classic in the philosophy and sociology of science. The book challenges and subverts the conventional wisdom about science as a neutral, value-free enterprise untainted by sociological factors. Critical rationalist school in the philosophy of science—a school Popper belongs to and, in fact, champions its cause—sees science as a rational activity. Science is conceived by this school as the only human culture that can give us true knowledge. Science is thought of as a progressive, cumulative activity, steadily

giving rise to increasingly elaborate theoretical construction³. Kuhn's account of science runs against this image of science. He sees science as, like the history of society itself, discontinuous- as punctuated by conceptual leaps or conceptual changes and transmutations. The main thrust of his analysis of science revolves around paradigm. A paradigm is an exemplary piece of scientific research focus which a group of scientists work within or around. The paradigm provides a working model of how to do science in some area, providing the conceptual apparatus, methods, standards of validity and so on which govern the research practice of the whole "scientific community" engaged in this particular specialism. The methodological adequacy of the rules of the paradigm is rarely questioned; scientific education tantamounts to indoctrination into the established paradigm, and a failure to solve a "puzzle" within the purview of the paradigm will be viewed by the scientific community as that of the researcher, not the paradigm. This period of getting along well within the paradigm Kuhn calls "normal science". But the paradigm at a particular time might be confronted by a crisis or, to use Kuhnian idiom, anomaly which the conceptual tools of the paraadigm will not be able to deal with. This period would be a crisis within the scientific community.

In order to resolve the crisis a new model or conceptual apparatus for doing science in the crisis area would have to be generated. The community of specialists may come to accept the new model or, better still to use Kuhnian idiom, the paradigm for research provided it can deal with the anomaly. When this happens Kuhn speaks of a "revolution". A revolution occurs when the specialists decide that the new paradigm can deal squarely with the anomaly and can grapple with physical reality better than the old paradigm. What is involved in switching from one paradigm to the other? Although reasons might be adduced for switching from one paradigm to another, this can only be justified to a certain degree. Justification has to stop at a point and a step made which has no justification. The scientific community cannot look outside for any help because the community itself decides on this new paradigm. It is the final court of appeal. Kuhn believes that certain extraneous factors influence the scientific community; on most occasions social factors in deciding finally about a new paradigm.⁴

Kuhn's characterization of science has a definite tinge which is partly caused by the metaphors which he finds it natural to use-and this is that the scientists form a "community" of practitioners. The subject of "scientific community" is a central focus of his work, with an emphasis on the social solidarity, a settled way of life with its own habit and routines. This patterned way of life in the community is brought about by the socializing process the scientists went through or, put more strongly, the indoctrination process that they underwent and which made them into a closed society ready to defend the conceptual models they had been socialized into. I will like to point out that this point and others have been amply criticized⁵.

Since Kuhn's book came into the light of day, it has been read and interpreted in different ways to support different revolutionary positions in the philosophy and sociology of science. Indeed, it has generated a ferment of revolutionary ideas, for the very reason that it transformed our accepted belief about science and it wrought a revolutionary transformation of science.

The significance of Kuhn's work is not lost on the social scientists. They see the different contending schools or methodologies in the social sciences as analogical to what obtains in the natural science where you have paradigms contending in the same terrain and none is held superior to the other. They do not see the multiplicity of approaches - like structural functionalism, conflict theory, medium theory etc - as an inhibiting factor for social sciences developing into a fully developed scientific enterprise⁶. Rather they see this as a healthy factor for the development of social sciences into a full-fledged science. The present book under review gives a sort of consolation to the social scientists in their endeavour, not explicitly but implicitly. Kuhn's idea has been united with semiotics- the science of signs - and structuralism in France by the group associated with the French marxist philosopher, Althusser. In the U.S. and Britain, various social scientists have also appropriated the concept of the paradigm as a sociological category, which has affinity with concepts like "scientific community", "invisible college" or "social network". This is evident in the number of studies that have been carried out on the emergence and development of new scientific specialities or disciplines⁷. Varying factors are given to social and

cognitive factors that shape the orientation of these groups, and it is claimed that no adequate distinction can be upheld between these two factors.

Barry Barnes has been a consistent advocate of the position that collapses both social and cognitive factors into one another. He belongs to the Edinburgh group—other members are Bloor, a philosopher and Shapin, an historian of science. Their view is highly influenced by modern sociology of knowledge, and it is a consciously relativist programme—they call it the “strong programme” in the sense that there is a strong interaction between social factors and cognitive contents of scientific knowledge. Scientific ideas are not given any privilege status, and they should be studied, from the point of view of sociology, in exactly the same manner as religious beliefs, myths, magical mythologies etc. The group depicts scientists as cosmology builders. In books upon books, and in many articles this group has pushed Kuhnian ideas to an extreme form⁸. ‘Drawing on the works of the well-known anthropologist Mary Douglas—her concepts of group and gird—and that of Jurgen Habermas’ *Knowledge and Human Interests*, and using the history of science, this group advocates a social reconstruction of scientific research programmes, as opposed to the earlier rational reconstruction espoused by philosophers like Popper, Lakatos and Laudan⁹. The position of this group has landed it to an extreme form of relativism. Therefore, the debate between this group and the critical rational school regarding the strong programme the group espouses revolves upon issues like epistemological realism contra - relativism.

The main thrust of Barnes’ book is to develop a social epistemology that will give a proper anchor to the Edinburgh group’s position. It is therefore written to shore up the weakness in the strong programme. The book is not so much about Kuhn or Kuhn’s theory; rather it uses Kuhn as a foil to explore the epistemological implications of the Kuhnian ideas.

The group’s earlier programme focused principally on the terrain of sociology and the history of science. In the ensuing debates that this generated, some philosophers of science—like Laudan and Mary Hesse—have vehemently opposed the Edinburgh group’s epistemological relativism. The opposition to the group’s position

is weaned around the logic of reason as opposed to the logic of history or growth of science, and this opposition has revitalised realism in the philosophy of science. It is this controversy that has made Barnes to take up the discussion in this embattled terrain of the philosophers.

The main disposition of the book under review is devoted to arguments concerning knowledge and cognition, and giving accounts of conventionalist and instrumentalist epistemologies. Barnes' point of departure is that the resistance to the sociological factors (or backgrounds) in science of what is valid and true, or rationally justified has almost been overcome. Resistance to this position remains only among a few pockets of positivist and critical rationalist philosophers: otherwise it is now accepted that knowledge is now held to be socially constitutive. This position strikes one as a highly conventionalist one-and the implication is that of conventionalist epistemology. He believes that what remains now for conventionalists is to convince scholars who are averse or opposed to this position. This task, Barnes admits, is important because the precise implication of the position that knowledge is socially constitutive is not firmly formulated and hence not clear. He sees this fuzzy formulation of the position that knowledge is socially constituted as the root cause of the opposition to it, and hence the embracement of the realist position, whereby knowledge is portrayed as a representation of reality. The nagging worry of Barnes is the obvious contradiction between realist and social constructivist epistemologies, and part of the job of his analysis in this book is to dissolve this contradiction.

If the evaluation of the present state of the debate over relativism given by Barnes is accepted-in which the philosophers of science with relativist leaning make appeal to realist position to buttress their point-then his ambition to harmonise the two divergent position is justified. But his perception of the debate over relativism appears oversimplistic and his attempt to unite the two positions-considering the fact that the dividing line is about rationality in science- is gratuitous. Barnes' social constitutive or constructivist account of knowledge does not really square with the logic of reason position of the realist; they are rather poles apart.

Even if we were to accept Barnes' account of the situation, our expectations are dashed. His foray into the landscape of philosophy

of science, unfortunately, has not done much to bring about the much needed clarification, particularly when it comes to the analysis of the strong programme thesis and lending credence to it. The impression one gets is a flat-footed, plain conventionalist and pure instrumentalist philosophy of science which falls short in some ways of a fully worked out and sophisticated rival tradition of the empiricists and logical positivist camps—the tradition which Kuhn subverts by rejecting the fact/theory and fact/value dichotomies. This tradition has also had its rebel within its rank; for instance Quine has debunked the fact/theory etc. dichotomies in his influential paper, “The Two Dogmas of Empiricism”¹⁰. The only saving grace of Barnes’ project and which makes it interesting in this book is that he makes use of certain amount of theorizing from social anthropology and the philosophy of biology, in particular the area of taxonomy and classificatory systems. His main thesis about classificatory systems and taxonomy is that they are culture-bound; this thesis has to do with the realist/nominalist controversy which has far reaching implications in other areas of philosophy. One other enduring value of the book is Barnes’ suggestion that concept-learning is a cultural phenomenon and this has ramification for epistemology—especially cognitive epistemology.

As I have earlier pointed out the rejection of the demarcation between science and non-science is grounded on the sociology of knowledge, in that social factors or phenomena are important and considerably influential in any branch of knowledge. Any mode of discourse, to use Foucaultian idiom, is determined by social factors. Although this is over exaggerated, there is a grain of truth in this thesis because any branch of knowledge is to some extent socially determined. Barnes thinks that science is social. There is something paradoxical in Barnes’ position. In attempting to defend his position against the attack of realist he lands himself in the same position of some logical positivists, because they too cast off realism and uphold an instrumentalist and conventionalist position, in order to defend their philosophical tradition against the realists. What has emerged now is that the old controversy between realism and instrumentalism has assumed a new dimension, with the latter getting a backing from the sociology of knowledge.

I have gone to this length to review the basic thesis of Barnes and his group in order to draw out some implications over

the question of rationality in African traditional thought. The group's strong programme denies that the concept of rationality is universally the same. In Barnes' and Bloor's contribution to the book, *Rationality and Relativism*,¹¹ they vehemently argue against the universalist conception of rationality *a la* Horton. They are of the opinion that rationality is culture-bound, and what is accepted in that culture as rational may not be accepted in another. There are not objective, external criteria for evaluating rationality, and that explanation is hence symmetrical within the culture. Drawing on the works of scientific enterprise and social anthropologists, they include that there is more to be said for relativism in rationality than against it. Beliefs of people depend on their conviction that they serve them, and the epistemic status of the beliefs has to be weighed or evaluated within the totality of that society's culture. Their position, in a nutshell, is simply an extreme form of relativism in terms of rationality.

It would be seen that their position is at variance with that of Horton. They believe, pace Horton, that the western conception of rationality is not the only form of rationality. I need not rehearse Horton's position¹² here because it is wellknown but suffice it to say that he believes, following Popperian philosophy of science, that the western scientific society is more rational, objective and empirical and these attributes distance it from the African traditional thought which he feels does not have those attributes. Although Horton notes that both thoughts have theoretical underpinnings; they seek underlying simplicity, order and unity; they place things in a wider context than common sense. Horton further notes that in African traditional thought theory and common sense have complimentary roles in everyday life and thought just like science. But the fundamental difference between traditional thought and western scientific society is that in the former there is no alternative to the existing body of theory whereas in western science this is not the case. Furthermore, western science is objective while this is not the case with African traditional thought. And following Popper, he believes that in western science theory is not a closed chapter but an open one. Hence he believes that western science is open and the African traditional thought is closed. These two terms are Popper's own too. (See Popper's *Open society and its Enemies*).

There are a number of criticisms that could be levelled against Horton, and the Edinburgh group's position seems valid in face of the revised view we now have about science. Science is not the paradigm of rationality as we thought it was. Horton's position is still enclosed within the Popperian philosophy of science. Hence the unwarranted claims he has made for western science on the basis of this Popperian position.

The Edinburgh group's strong programme has debunked this because its conception of science is radically different from that of Popper and Horton, and this position of the group has been influenced by Kuhn's revolutionary thesis about science. So on the whole rationality, according to the Edinburgh group's position, is not a universal thing; it is culturally determined. One could also add that western science, following Edinburgh group's stand is not more rational than the African traditional thought. At any rate, as Wiredu has rightly pointed out, the traditional western thought was not more rational than any other thought; neither does the average western man think more rationally than an average African man as Horton would want us to believe¹³.

It is, however, necessary, despite my strong objection to Horton's view, that in this part of the world we need to develop a scientific culture. This suggestion does not necessarily diminish our culture and it does not mean that African traditional thought had not served us well but for us to move into the mainstream of world scientific culture. African societies have to develop scientific culture tempered with our African humanness. It is through this that we can participate in the world universe of discourse.

In rounding off this paper what has to be pointed out is that the Edinburgh group's view has subverted some "standard views of science" as a rational enterprise like Kuhn's position.

Not only this the hallmark of the group is sociology of knowledge coupled with the history of science, and this has made it possible to look afresh at certain basic fundamental issues, not only in science, but also in other modes of knowledge; and the impact of all these is that culture, or society determines beliefs, view; in fact knowledge in general. This position affects the concept of rationality as a culturally determined phenomenon¹⁵.

The group's position reinforces the views of some African philosophers, like Anyanwu, who have consistently disputed the universality of western conception of rationality, and have argued that Africans have their own concept of rationality or, to use Anyanwu's phrase, "mind-set" different from the so-called western's own. In an exposition like this the complexities of the issue cannot be properly discussed and justice done to the various view points in this contested terrain due to limitation of space. However, I can only end by saying that the Edinburgh group's thesis has to be explored by African philosophers, for it portends enough fruits of enduring values for African philosophy in general.

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NOTES

1. B. Barnes, *Kuhn and the Social Science* (London: Macmillan, 1982)
 2. M. Hollis and S. Lukes, (eds.), *Rationality and Relativism* (Oxford: Basil Blackwell, 1983).
 3. K. Popper, *The Logic of Scientific Discovery* (London: Hutchinson, 1959) and also *Conjectures and Refutations* (London: Routledge & Kegan, 1963). Laudan's view is not altogether dissimilar to this despite his distance from this position. For his position, see L. Laudan, *Progress and its Problems* (London: Routledge and Kegan Paul, 1977).
 4. T. Kuhn, *The Structure of scientific Revolution*. 2nd ed. (Chicago, 1970); see also M. Mulkay, *Science and the Sociology of Knowledge* (London: Allen & Unwin, 1979).
 5. For this, see I. Lakatos and A. Musgrave (eds.) *Criticisms and the Growth of Knowledge* (Cambridge, C.U.P., 1970)
 6. Sheldon Wolin, "Paradigms and Political Theories" in *Politics and Experience* (eds). P. King and B.C. Parekh (Cambridge: C.U.P., 1968).
- Alan Ryan, "Normal Science or Political Ideology" in *Philosophy, Politics and Society* Vol. IV (eds.) Laslatt, Runciman and Skinner.
- T. M. Bottoomore, "Competing Paradigms in Macrosociology" in A. Inkeles *et al*; *Annual Review of Sociology* (Palo Alto, 1975) pp. 191-202.

7. For this point, see R. Robertson, "Towards the Identification of the Major Axes of Sociological Analysis" in John Rex. (ed) *Approaches to Sociology* (London: Routledge & Kegan Paul 1974).
8. Their major books are B. Barnes, *Interests and the Growth of Knowledge* (London: Routledge & Kegan Paul 1977);
B. Barnes, *Scientific Knowledge and Sociological Theory* (London : Routledge & Kegan Paul. 1974);
D. Bloor, *Knowledge and Social Imagery* (London: Routledge and Kegan Paul. 1976); D. Bloor, *Wittgenstein: A Social Theory of Knowledge* (London: Macmillan 1983).
9. For Lakatos' major work, see his *Proofs and Refutations* (Cambridge: C.U.P., 1976) and his contribution to *Criticism and Growth of Knowledge*, where he modifies and refines Popper's position.
10. V.W.O. Quine. *From a Logical Point of View* (N.Y.:Harper and Row, 1961).
11. Barry Barnes & David Bloor. "Relativism, Rationalism and the Sociology of Knowledge", in M. Hollis & S. Lukes, Op. cit.
12. R. Horton, "African Traditional Thought and Western Science" in B. Wilson, *Rationality*, (Oxford: Basil Blackwell, 1970); see also the refined restatement of his position in Hollis and Lukes, *op.cit.* entitled, "Tradition and Modernity Revisited". A point has to be made that it is not correct to compare the traditional African thought and western science, for they are not on the same par or identical hence incomparable. For this point see Wiredu, "How not to Compare Traditional African Thought with Western Thought" in *Philosophy and An African Culture* (Cambridge: C.U.P., 1980). In a private conversation with Wiredu in 1979 in Ghana he was of the opinion that it was illicit to have compared these two different modes of knowledge. They are totally different.
13. K. Wiredu, *Ibid.*
14. See Chinweizu "The Scientific Ethos and the Modern Nation State". *Guardian* Sunday, June 24th 1984; and also A. Irele, "Culture and the Idea of Nigeria", Forthcoming in *African Philosophical Inquiry*.
15. I will like to point out that western society is now facing a crisis of rationality, For this see A. MacIntyre, *After Virtue* (London: Duckworth. 1981).
16. K.C. Anyanwu, *African Experience in American Marketplacce* (New York: Exposition Publishing Press. 1983).