

**BOOK REVIEW**

**Title: *INTRODUCING AFRICAN SCIENCE: SYSTEMATIC AND PHILOSOPHICAL APPROACH***

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This book *Introducing African Science: Systematic and Philosophical Approach* Authored by Dr. Jonathan O. Chimakonam and published by AuthorHouse, Bloomington Indiana USA in 2012 is, without doubt, unique, valuable and captivating. To introduce African Science is an audacious venture: it is a pre-supposition of the existence of a science that can be said to be African. To indicate that it can be systematically and philosophically approached is another audacious statement. Asi Okuko na nke obu n'onu ebuka owerekwa ukwu n'abota ozo. But Dr. Chimakonam is not an idiot: he knows the difference between Confucius and confusion. Go through the book and observe a display of originality, dexterity, skill, learning and knowledge therein contained.

In this one hundred and sixty seven (167) page book, a truly *Multus in parvo*, Dr. Chimakonam sets out tactfully and thoughtfully to establish that “Africa has a peculiar thought system” which undergirds a peculiar logic and science. The author maps out the African logic as three-valued different from the three-valued logical creation in the West. This, I think forms the foundation of the entire work. For without this logical difference, it would have been vain to talk about African science. People are apt to ask: why African science? What would be the focus and utility of African science? Understanding the need and direction of the logic of this work provides immediate answers to these questions. To me the chief value of this work and of course, its greatest intellectual value lies in the formulation of this unique logic. Thinking of this magnitude has been lacking among African intellectuals. Logic lies at the foundation of everything, once it is established, every other form of theorizing takes shape. Aristotle was the man to do it in the Western tradition, creating the foundation upon which theorists of different inclination can build their thought. Logic therefore is the foundation of thought. We cannot correctly do African philosophy, mathematics, science, etc., without first laying a logical foundation for such. The practice which has grown uncontrolled since the colonial times in which African intellectuals seek to construct native African theories upon the logical foundation of the West are simply misguided. Western intellectuals read such works and toss it aside because they see nothing different in it from what they have since accomplished.

What this author has done therefore, is like unveiling an Africa the world never knew existed. By first mapping out African thought system and systematizing its unique logic, he sets the stage for others to follow and build other theories of African nativity. In this work, he systematizes and strengthens Africa’s age long scientific practices; a magnificent rebirth of old knowledge and a torrential gift of fresh discovery. Only history and posterity would probably come to understand what invaluable impact this noble project

would make to the life and story of the black man wherever he is in the world. Indeed, this is a book right on time but ahead of its time!

In writing this ground breaking book, Dr. Chimakonam in his own words, “gave a historical and metaphysical background to the theory of African science and offered a justification for the project”, this consists in the question: why African science? His justifications can be summarized in three points: (i) the need for Africa to re-enter history and contribute to world civilization (ii) the need for an alternative science to augment Western science and cushion some of its defects such as ecological concerns and threats of all kinds (iii) the need for a science that can offer safe and adequate energy to the world. Everyone who is in tune with the developments in Western science and our world today would agree with Chimakonam that an alternative science is long overdue.

In the page thirteen, he began describing and mapping out the logic of “our science”. It consists of two opposite values of truth and falsehood and a go-between value (third) called ezumezu or the complemented. Further, he stresses that the two conventional values are contraries in African logic rather than contradictories of Western orientation. This enables the two to hold at the same time. In his words:

T represents truth, F represents falsehood, the C represents complemented, and so instead of seeing C as neither true nor false, African logicians see it as both true and false. This is because African logic does not recognize the law of non-contradiction but that of complementarity. By this law of complementarity two different realities are seen as contraries and can cohabit. What happens however is that at their point of complementation, both realities lose their identities within the complementary mode. And they are treated as a full being, complete and not fragmented. So one cannot

say of the “complemented” it is true or it is false or even it is neither true nor false but that it is both true and false. (22)

One clearly notices the genius in this man’s formulation and of course, its reality in our day to day reasoning as Africans. As Africans, we do not strictly hold to views. There is always a mid point where two seemingly opposed variables can be reconciled. And in my view, this logic would usher in a better science. This was what Aristotle did in the 3<sup>rd</sup> century B.C when he studies the thought system of the Western people and came up with a logic that models it. Now, it is called universal almost in opposition to any other possible logic. Every logic naturally, if it holds merit at all, should be capable of universal applicability but this does not negate its nativity. Like Aristotle’s logic, Chimakonian logic has a universal applicability or as it is said, the character of topic-neutrality (29).

It is based upon this logical framework that Chimakonam constructed the theory of African science. He produces the hermeneutical understanding of some fundamental scientific terms like space, matter, anti-matter and energy all of which gives ribs to African science. In one word, this attempt is the first of its kind in the known history of African studies. The author progresses to discuss nature, time, motion, thought and extension hoping to use explanations extracted to crust the work. To further fortify the sinews of African science, special methodology of African science, its laws, theories, criteria and other principles including African logic and the principle of deniability are treated. Halfway through the book, there is an outpouring of intellectuality, a milling out of Igbo African scientific terms and terminologies and a practicalization of African science.

The criteria for African science consisted in nine principles he discussed that must be in place before one can be said to be doing African science. These are: (i) Usoro (process) (ii) Njiko Ala-

mmuḡ na Ala-mmadu (confluence of the natural and the sub-natural worlds) (iii) Mmeputa isiokwu (articulation of research problem) (iv) Mmeputa achḡba (formulation of hypothesis) (v) Icho-uzḡ (experiment) (vi) Omenala (theory) (vii) Icha-uzḡ (setting aside) (viii) Iwu (law) (ix) Inabata na iju Achḡba (asserting and denying of hypothesis). These criteria helps in his systematization to draw a line between what qualifies as African science from the residue of unscientific practices. But from the items on this list, one readily sees the presence of African logic and the uniqueness of African science. The criterion numbered (ii) above shows the effect of the complementarity of the two contrary values in African logic. Also implied is the necessity of the metaphysical in African science. African scientists see metaphysics as a necessary part of scientific discourse. “Its position is entrenched and as such it cannot be wished away. They see the sub-particles as metaphysical realities and know that they have crossed into mainstream metaphysics when they conduct experiments with these sub-particles. Hence, metaphysics is not a bad sign for the African scientists” (97). In page (94) he observes, “However, even after this systematization, metaphysics looks quite hard to wish away from the main stream practice of African science”. And in (66) he notes “African science recognizes that an adequate scientific exercise must connect elements from the two worlds. Nka-mmuta (scientific knowledge) is never produced in Ala-mmadu outside Ije (motion) and the source of Ije is Ala-mmuḡ. In fact there can be no science without the two being pulled together”. The worlds referred to are the empirical and the metaphysical. He has also employed the terms natural and sub-natural as their synonyms (40-44).

The author also discussed the methods of African science to include: (i) Akḡ-nwalee (Trial and error) (ii) Akḡ-iju-ase (Interscience) (iii) Akḡ-ime-obi (Introspection) (iv) Akḡ-nyiri-onwe (Semiscience) (v) Akḡ-nso-n’azu (causal science). One could see the delicate systematization of procedures of old African scientific practices here which sets it apart from those of the West. In his

words:

Unlike Western science which captures nature and employs different means to force scientific knowledge out of her, African science approaches nature with equanimity, like a man approaching a maiden he wishes to marry, curious but gentle. This is because the scientist is not different from nature neither are his instruments. A man stitching own wound is likely to be gentle. This gentility in conducting scientific enquiries crystallizes in the observance of *Iwu-nyiri-onwe* (the law of uniformity). This law ensures that as far as experiments could be taken that there is a thin membrane which must not be crossed. This thin line is called in African science udo-ntupo (UDN) or the dotted single helix. (52-53)

These accentuate some of the justifications the author offers at the beginning of the work that an alternative science which can engender safe science is needed.

Further, the author discusses some of the theories in African science. They are (i) Uwa-ezu-oke (ii) Odiḅendi (iii) Amasi-amasi (iv) Ifeomimi. These give wide ideas and confirmation of the existence of scientific practices in Ancient Africa. Without any need for greater proof, a typical African reading this section sees those normal, regular practices in his everyday life as the author has ably re-articulated them in scientific terms.

His discussions on some laws of African science are equally stellar. They are as follows: (i) Egwueji (The Law of the Means) (ii) Iwuibe (Law of magnetism) (iii) iwundiiche (Law of discordance) (iv) Iwu-nyiri-onwe (Law of Uniformity). You could see the application of some of these which Chimakonam has elevated to the status of laws in the everyday activities of the

African. It is so stunning that what was seamlessly done by Africans have scientific undertone.

The author's discussion of the Schools of African Science is most captivating. There are two rival schools in African Science namely, the transcendentalists and the mechanists. The transcendentalists hold that the goal of science is to provide a true description of a certain part of the world namely, the material and the anti-material worlds. They hold that the non-material world, the source of motion and scientific inspiration cannot be adequately described by science since to do so, scientific knowledge must not only precede but also be independent of the non-material world. Since this is not the case, the transcendentalists prefer to treat claims about the non-material world as *Ifeomimi* (mystery). On their side, the mechanists hold that the goal of science is to provide a true description of the world as a whole (92). And this includes the natural and the sub-natural.

In the section on explanation in African science, the author pulled resources from the theories of I. I. Asouzu, G. O. Ozumba and C. O. Ijiomah to offer a veritable explanation to Africa's scientific practices. Some of such models of explanation he developed include: (i) Ozumba's Integrative Humanism Model (IHM) (ii) Ijiomah's Model of Harmony of Contraries (IMHC) (iii) Asouzu's Ibuanyidanda Model (AIM) (iv) Model of Causal Explanation (MCE). The value of this section hinges on the models which the author developed to explain the non-empirical aspect of African science. In his words: "It is Western science's own bogus claim that all there is (reality) can be explained using the principle of empirical, testable, demonstrable protocol. The implication is that anything which cannot be explained by science does not form part of the gamut of reality"(98). The author clearly shows how the non-empirical can be explained within the ambit of African science.

On the whole, this work by Dr. Chimakonam is not without some lapses. There is no academic work without lapses. It behooves an objective reader to see the true lapses and point them out for correction. For me, I think the greatest challenge this work has is that it is set ahead of its time. For this, this work spells of some great controversies. My modest advice to the intending reader is to first set aside his convictions about science. I promise you this work would brazenly decimate them if you don't. And in this, Western scholars would be tempted to discredit it. African scholars too, who are not conscious of the strangle-hold of Western thought system and logic in their lives would be tempted to discredit it as well. But this would be highly unfair and intellectually myopic. One great thing about this work is that it laid its logical foundation strongly, that if one should endeavour as little as to grasp that, every other seemingly controversial claim would come up clear and dissolved. Any further issue that would be left at all would be a matter of possibility of practice and not merit. The merit of this work for me is not in doubt. Its originality is praiseworthy. Its significance for the African intellectual and for Africa is tremendous. I have no greater problem with this work besides normal academic disagreement and an insistence for improvement. This however, is a common responsibility of all African scholars to seek ways of improving this proposal of African science. Indeed, if most African scholars should begin to write in this form rather than the annoying commentaries we produce, issues like racism which has its fundamental roots in the doubt of the African's intellectual ability would die sooner rather than later.

I reproduce here three golden paragraphs from the postscript of the work which I believe is a food for thought for all African intellectuals:

Alright, let us assume that in these sketchy paragraphs we have systematized a section of African experience and it could now be called science at least by our modest African standards; but what then would be the challenges of this new discipline? Are schools

and universities likely to introduce courses in it? Is there a need for a unique African science? What difference would it make? Would the laboratories of this science be different from those of the Western science? How do we raise technologies for this science? How do we create awareness and promotion for this science? Who are the African scientists?

I shall attempt to answer these questions although am not sure I can fully answer the whys, the whats, the hows, and the wheres but I know that I believe in the uniqueness and viability of this science. “Believe”, because I do not have greater proof beyond what I have written here. In these particularly difficult times where African scholars do not see any need for this exercise, they ask: what can African brand of science offer that the Western science could not offer better? Can any section of African experience be properly called scientific? Is it not a waste of time, energy and resources to raise a new science where we already have a viable one? Indeed, it does not make any sense for a typical African intellectual to moot the idea of a unique African science and by an even greater conviction, there is no need!

However, a tricky question looms large? Why have Western trained African scientists not been able to invent at least in the same ratio with their Western counterparts? A litany of excuses could be produced in a flash of light – a terrible window dressing! They would blame lack of funding, lack of enabling environment; lack of public and corporate motivation, lack of governmental support etc., but what of lack of talent? In the days of soviet socialism many hopeless men blamed governmental restrictions for their inability to utilize their talents. When however the Soviet Union collapsed and they secured their freedom, it came to light that they did not have talents. A Western trained African scientist who lost his natural African thought system has lost the use of his talent. Talent is something that springs naturally when one thinks within his native thought system. Losing one’s thought system is

tantamount to losing one's talent. A great legion of Western trained African scientists have successfully emigrated to the Western worlds where they met the diner set on the bed for them, and in working in the same environment with their Western counterparts have still not excelled. They become programmers, lab assistants, research assistants but never inventors. If we exclude a handful like Philip Emeagwali the rest are but men who adopted the Western thought system but who found out they could not think within it. Like the Igbo would say, they become like a man separated from his chi, walking around a mere living dead. A Western trained African scientist who also gave up his African thought system (as most do) and adopted a Western thought system is like a Jew in Babylonish captivity, how can he sing his native song in a strange land? God who made us Africans and gave us unique cultures and system of thought obviously intended those frameworks to be our working tools. How can the African fare better than the European in his native dance? Nor can the European outdo the Asian in his native ways? How else can the African contribute to the world civilization if he did not do so from his native ways, like the European and the Asian do from theirs. Western trained African scientists are like strangers in their land and so cannot sing their native songs in a strange land. Highly educated but lost and essentially useless to the world except of course we choose to call them technicians rather than scientists! We have the foreign legion and then the home legion but in all, there are but an insignificant number who knew this fact and retained their native thought system. Philip Emeagwali the man who invented the internet is one such African. Recall that Bill Clinton a onetime American president remarked that if Nigeria had as few as four scientists who think like Philip Emeagwali, that Nigeria would be on course to becoming a technological super power. This probably summarizes our point here. In a country of over 150 million people with millions of scientists yet not up to four of them, possibly no one of them could think like Philip Emeagwali! Not that the millions of scientists in Nigeria cannot or

do not think, they can and they do but only within Western thought system. And as this is not naturally genial to them, they simply cannot produce within it. With this I hope I have made my point that there is a need for a unique African science fit with African thought system where the African scientist looks at nature from his own native ways (117-119).

Dr. Jonathan O. Chimakonam not only explores in detail and successfully, the theories of Igbo African science but goes on to give critics who question Africa's intellectual ability, a big lie. He shapes the way we shall begin to see and do not only African science but every intellectual project by getting a handle on Igbo-African logical thought and science. No wonder he has been hailed as the father of African science and as one of the continent's brightest minds. This book would remain a great reference on African science/studies for all time to come as it is a reference for all of us today!

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<sup>i</sup> An abridged version of this review was published in *South East Star*. March 20<sup>th</sup> 2013 vol. 01. No. 09. P. 14