

# 100429 Particle physics opens up new sense of purpose for Africa

Horace Campbell

Since the dawn of time, Africans have had a conception of the universe in which there was 'no separation between spirit and matter' and it was 'impossible to develop ideas of domination over nature', writes Horace Campbell. While this world view was considered 'backward and primitive' in comparison with Western materialism and the perceived objectivity of enlightenment approaches, ecological crises and new developments in physics suggest that African theories on 'the relationship between spirit and matter are not backwardness' after all.

Since the dawn of time, Africans had a conception of the universe where there was an understanding of the different forms of energy. There was also an understanding that there was no separation between spirit and matter. Meanwhile, the crude materialism of Western 'modernity' emanated from an understanding of the world where rational man developed capitalism. The definition of the essence of the human was determined by the extent to which these humans believed that human life was based on the accumulation of material wealth and this material wealth as the basis for 'progress'.

Humans who did not internalise this understanding of the accumulation of wealth – a form of accumulation that took perverse and genocidal forms when it matured into the capitalist mode of production – were considered backward and primitive. The Western 'enlightenment' approaches to life were considered 'scientific' and hence objective and neutral.

Western modes of economic organisation engendered a tremendous boost in the production of goods, and this unprecedented production of goods was worshipped to the point where commodity fetishism was like a new religion. Spirituality and commodities were conflated to lay the basis for a robotic society, where cloning and bioengineered creatures were the promise of the future.

Like many of the old and indigenous cultures in the world, the African peoples had resisted this 'robotisation' of persons and held onto a link with the wider universe. This understanding of the ancestors and the infinite universe gave the majority of African people a deep sense of humility and a relationship with the universe where it was impossible to develop ideas of domination over nature. This humility is best expressed in the African links to the ancestors and the links to animals through totems. It is this humility that inspired and influenced the African ideation plane and held the societies together.

In the middle ages, Europeans developed a new sense of themselves and created conceptions of the universe and of nature that placed humans at its centre. This mechanical world view meant that humans could determine the future of all life and that humans could dominate nature.

This view of life has brought humanity to a tipping point where the future of the planet is threatened. Global warming and the threats to life are forcing new ways of thinking and new ways of knowing. Africans who had organised their life based on a spiritual energy and based on an understanding of the geometry of nature had resisted the 'rational' and mechanical point of view and this resistance retreated waiting for the moment to re-emerge. It was as Amilcar Cabral noted that African cultures and ideation system was like a seed awaiting the conditions for germination.

African peoples at the grassroots are now reflecting on whether the convergence of the new breakthroughs in particle physics and the challenges of the threats to the planet have created the conditions for a break with mechanical thinking.

On Tuesday 30 March 2010, Western European scientists moved one step further in seeking to

understand the building blocks of life. At CERN, the [European Organization for Nuclear Research](#) in Switzerland, scientists who have been building the [Large Hadron Collider](#) advanced the experimentation to the crack the fundamental laws of physics said they had recreated in miniature the conditions just after the start of the universe. In what has been called a groundbreaking moment, the researchers combined two opposing beams of sub-atomic particles travelling at almost the speed of light, as they attempted to simulate events in the fraction of a second after the 'Big Bang', the most widely accepted theory. Ever since the time of Albert Einstein when he developed the theory of relativity, scientists have been seeking to expand and develop experiments to test the basic laws of quantum physics.

According to a newspaper report in the New York Times (30 March), after 'two false starts due to electrical failures, protons that were whipped to more than 99 percent of the speed of light and to record-high energy levels of 3.5 trillion electron volts apiece raced around a 17-mile underground magnetic track outside Geneva a little after 1 p.m. local time. They crashed together inside apartment-building-size detectors designed to capture every evanescent flash and fragment from microscopic fireballs thought to hold insights into the beginning of the universe.'

This collision of protons at 99 per cent the speed of light marked a new epoch in the ability of humans to recreate new forms of energy. The breakthrough heralds the beginning of a new era in efforts to try to understand profound scientific questions, including whether the sub-atomic particles – quarks – inside the protons and neutrons can be freed; and why these latter particles weigh some 100 times more than the quarks of which they are composed.

As the scientists said in the newspaper interviews, 'We are really starting physics.'  
This admission by the scientists is an actual wake-up call that the old is dying and the new is about to be born.

For two hundred years mainstream western physicists used a mechanistic view of the world to develop and refine the conceptual framework known as classical physics. Matter was thought to be the basis of all existence, and the material world was seen as a multitude of separate objects assembled into a huge machine. Like man-made machines, the cosmic machine was said to be made of multiple parts. Consequently it was believed that complex phenomena could always be understood by reducing them to their basic building blocs and by looking at the mechanisms through which they interacted.

It was a form of materialism internalised by both capitalists and some socialists. [Fritjof Capra](#), in the book [The Turning Point](#) more than thirty years ago, alerted humans to the great possibilities if humans broke the mechanical conception of the world.

Scientists who took the time to understand the African world view had understood that Africans did not make the separation between spirit and matter. What is now called energy is what is understood as great spiritual forces.

Ordinary Africans had learnt long before modern astronomy that the universe was immense and that there were as many stars as grains of sands in the Sahara desert. The Dogon people of West Africa were one of the many African societies who possessed deep astronomical knowledge. This knowledge of the Star Sirius B series had confounded western anthropologists and astronomers. Charles Finch, author of [The Star of Deep Beginnings](#), sought the authority of one of the pre-eminent physicists to make his point on the importance of the spiritual energies of the African village community.

Thus Finch argued: 'The Newtonian model is one valid for the objects and events of everyday experience but Einstein's model gives us a more complete description of cosmic phenomena.'

Nonetheless, Einstein saw his model as amplifying and extending Newton's not replacing it. But quantum mechanics challenges the basic Newtonian model, in effect; things are not what they seem.'

In this century, scientists now have to deal with the realities of 'uncertainties' and the fact that things may not be what they seem. The explorations in relation to fractals, 'particle' physics and chaos theory are manifestations of the search for a grasp of the forces of the universe and demonstrate a search for new insights into the interconnections between humans and all aspects of the universe. This is the force behind a new appreciation for the spiritual forces at work in the universe. The physicists and scientists of the period of the enlightenment would have dismissed much of what is going on in the realm of theoretical physics in this era as superstition. The fact that there was uncertainty and elements of the unknown had inspired a level of humility in pre colonial villages for it was understood in the village that there were other ways of knowing other than observation. Finch in discussing the elimination of the distinction between reality and illusion and between objectivity and subjectivity added:

'In quantum theory, the properties of an electron or a photon do not exist until they are perceived and measured. Thus, what a photon is going to be – wave or particle – depends on how and when it is measured; it comes into existence as one or other by virtue of being measured. If the most neutral, unencumbered experiment imaginable could be designed, the results of the reaction would be altered by the very act of observing it.'

This means that the perceiver and the thing perceived, are indissolubly linked, absolute objectivity is impossible. Moreover, from the quantum point of view, things exist because they are perceived. This realisation has created an intellectual crisis that is still to be worked out. What many scientists seem reluctant to face is the fact, in some sense; consciousness itself is infused into the 'stuff' of space-time. The positivistic rationalism, imbued with assumptions of 'realistic' objectivity that has dominated science for the last two centuries is a paradigm requiring radical revision.

The experiments at CERN are an attempt by Western scientists to work out the intellectual crisis that emanated from the separation of spirit and matter. African epistemology and ontology on the relationship between spirit and matter are not backwardness as the Western ideation system and modernisation theorists have claimed. The CERN experiment was an acknowledgement that the old myths of modernity and progress, in short, capitalism, must give way to the new.

African peoples must be engaged to give birth to the new society and a new sense of human purpose.

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