# Imagine substituting leptons and quarks for gods and spirits!

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#### ABSTRACT

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Guided by the conviction that an exhaustive exploration of features common to modern Western and traditional African thought should come before the enumeration of differences, it is argued that the general propositions that can be formulated on the nature and function of Western traditional thinking are highly relevant to traditional African thinking. Despite the fact that African worldview reflections are mostly in terms of the world of which "we are part", and not the world where "we are inside", which is common to Western reflection. a surprisingly fundamental similarity exists in the type of conceptuality employed as well as in the process of theory making. This very similarity is put forward as a comparison of features common to Western and traditional African thought, From this comparative story of the theory making processes, the stage is set for addressing the pedagogical challenges within the Southern African multicultural context from which a new perspective can be explored, and a tentative framework be construed for a curriculum which can bridge the apparent irreconcilable differences.

Ever thought for a minute to imaginatively substitute leptons and quarks for gods and spirits? A ludicrous suggestion? Stated differently: Why believe in leptons and quarks when no fractionally charged particle has ever unequivocally been observed in an experiment? Then why not in gods and spirits? Is it simply because the acknowledgement of the existence of leptons and quarks does not touch or threaten us in our own being, whereas belief in gods and spirits has consequences for all we hope for and do? Does it matter?

Addressing the pedagogical challenges within the Southern African multicultural context resulting from the apparent irreconcilable differences between the fine-tuned Western cosmology and African cosmogonies.

The protest of Kwame Appiah (1992:120ff) against such a suggestion is not directed at the comparing of the natural sciences traditional religion as such. On the contrary, he finds it useful. His criticism, however, is directed at the identified differences (cf Appiah 1992:122ff). See Section 4 in this regard.

## 1 DO WE MIND THAT IT MATTERS?

If we would take one of the great challenges to science of understanding, the nature of human consciousness, seriously, as Paul Davies (1995:34) suggests, since "(w)e still have no clue how mind and matter are related, or what process led to the emergence of mind from matter in the first place", we find - on the one hand - Western reflection on consciousness taking recourse in the dualism of mind-matter, whereas on the other hand - African reflection displays an implicit understanding of consciousness as a psycho-social phenomenon. Within the Southern African multicultural context, the question arises: "Does traditional African thought - specifically with reference to cosmology - have anything to say or contribute to the stunningly impressive and fine-tuned (the anthropic principle) Western cosmological reflection in the contemporary debate?". The astonishing and pervasive success of the scientific-theoretical dissection and exploration of the cosmos in the beauty of its rational transparency is awe-inspiring, and in the exploration of the vastness of the expanding universe, is humbling (read "Hubbleing"!) for some.

We live between the profound implications of the uncertainty principle, of black holes which are not so black, to the Big Bang and Crunch, from an universe which is really completely self-contained and which has no boundary or edge, and imaginary time and the quest for the discovery of a complete theory, which will be the ultimate triumph of human reason. If we could develop a complete theory - in the words of Hawking (1988:175) "we would know the mind of God". And - in the words of Davies (1992:172), who explores the very notion of the mind of God - we as animated stardust can be content to know, having cracked part of the cosmic code, that we are living in the best of all possible worlds. Simply put: We mind that it matter(s)! Or does it only matter? Will animated (Western) stardust first have to bite the (spiritual) dust, before we "mind" in a broader sense? Can an "other" understanding of consciousness not perhaps provide us with clues?

One possibility comes to mind in this broader sense, that is to turn an attentive ear to other stories about the cosmos<sup>4</sup>. Other stories such as the African cosmogonies<sup>5</sup> - about their origin, meaning, and

<sup>&</sup>lt;sup>3</sup> Perhaps rather more humbling apt: "We would know the mind of a *British* cosmologist!".

This is also the plea - to name but one contemporary example of "turning an attentive ear" - of David Peat (1997) who suggests that it would be useful for us to examine our metaphysics in the light of that of another society.

Stories such as: creation from nothing (e g the Xoixoi of Namibia, the Bulu peple of Cameroon, the Ekoi in Southern Nigeria); creation from division of primordial unity

nature. But what contribution - if any - have these cosmogonies of Africa to make? It's precisely on this point that I invite you - just for a "naive minute" - to imaginatively substitute leptons and quarks for gods and spirits. Such a substitution would involve at least two circularities, namely a hermeneutic (we have to believe in order to understand and we have to understand in order to believe) and an epistemic circle (how we know is controlled by the nature of the object and the nature of the object is revealed through our knowledge of it). Since the epistemic status of leptons and quarks, on the one hand, and of gods and spirits, on the other, do not differ, I do not see any good reason why such an imaginary substitution could not be undertaken. On the contrary, I find it very promising. Therefore - of more importance to me - is the justification of the "why and how?" of such an undertaking.

Why? Negatively, the overhasty and insensitive reflective roads, mostly travelled in contrasting Western and African thought, have settled into well-worn dichotomies. The dichotomies used to conceptualise the differences are, very often, not only intellectually arrogant, but also (implicitly) degrading most of the time. Dichotomies such as: Intellectual versus emotional; rational versus mystical; reality-orientated versus fantasy-orientated; casually orientated versus supernaturally orientated; empirical versus mystical; abstract versus concrete; analytical versus non-analytical, are falsely posited. On the other hand, more positively, could a more careful and sensitive analysis of the relationship between Western and African thought in a post-Kuhnian age, characterised by the loss of epistemological innocence, perhaps not give us some clues as to the challenging question of relating mind and matter? Or - viewed from another perspective - address the question of (Western) spiritual impoverishment?

Guided by the conviction (following Horton 1993) that an exhaustive exploration of features common to modern Western and traditional African thought should come before the enumeration of difference, I would like to argue in this paper that the fundamental similarity in the type of conceptuality employed, put differently - the process of theory making, can tentatively and promisingly be explored as a vantage point

<sup>(</sup>eg the Krachi people of Togo); creation by emergance (eg the Yao of Mozambique), creation by secretion (the Boshongo of Central Africa); creation by word (eg the Swahili-speaking people of Kenya and Tanzania); creation from a cosmic egg (eg the Dogon people of Mali; the Zulus of South Africa); creation from chaos (eg Wahungwe Makoni people of Zimbabwe, the Yoruba of Nigeria); creation from clay (the Fang of Gabon, the Efe people of Zaire).

Cf Horton (1993:221ff) for a detailed discussion of the key differences. See also the criticism of Appiah (1992:107ff, especially 124ff) in this regard to earlier publications of Horton on his understanding of the diffrences.

in addressing the pedagogical challenges for construing a curriculum for the dialogical encounter of Western cosmology and African cosmogonies. Imagine substituting leptons and quarks for gods and spirits....

For my tentative and explorative construction of such a "dialogical" curriculum (which I will pursue below), I take it that most of you are more or less acquainted with the broad outlines of contemporary reflection on Western cosmology and the most salient features of traditional African though. I would like to focus on constructing a feasible framework for a curriculum within a multicultural context, which will not only make a fruitful dialogical encounter possible, but which will simultaneously and self-critically indicate future directives for such a relationship. A "fine-tuned" curriculum is thus not to be expected, only a tentative framework. For this framework, I wish to indicate, in the first place, the most important presuppositions on which the framework is based. Secondly, I take my lead from a specific African cosmogony in suggesting, thirdly, a "creation-centred" curriculum.

## 2 PRESUPPOSITIONAL BAGGAGE

\* Reality is stranger and even more multi-layered than we could have imagined, and Western science simply does not have a methodological nor metaphysical copyright on revealing/ disclosing "realities". I therefore agree with David Peat (1997:563) when he states: "One of the most dramatic products of the Western mind has been its particular approach to science, a discipline that, along with its associated technology, is by no means as objective, neutral and value free as we once believed. Western science expresses an entire metaphysics about the way we relate to the world, society and ourselves. Western

<sup>&</sup>lt;sup>'</sup> Cf Abraham (1995); Bediako (1995:93-6); Bolle (1987); Du Toit (1994:12ff); Dyrness (1990:42-52); Menkiti (1984:74ff); Penoukou (1991:24); Shutte (cf 1997); (1993); Wiredu (1984); Wright (1984).

On this matter, I am not questioning the competence of science. In many instances, its competence speaks for itself. But for good reasons in our very GUT- or TOE-quest, I take head of the words of Polkinghorne (1995:110): "It would be grotesque to suppose that science was the only form of inquiry into reality worthy of our attention. Science deliberately leaves out of its account questions of meaning, purpose, and value, and it disregards all the great swath of personal experience and encounter that actually constitutes most of what makes life worth living". Van Huyssteen (1993: 132), albeit in the context of the Science-Religion debate, raises the same point: "The sciences are eminently competent when it comes to theory construction and to experimental and pragmatic enterprises, but they are incompetent when it comes to finding answers to our deepest religious questions".

science has its triumphs, yet we are aware of the hubris connected to its success".

- \* Within Western cosmological reflection, the cosmos is taken as a physical reality, whereas in African cosmogonies, the cosmos is understood as a spiritual/social reality. The *logos* is taken as propositions in the former, while couching its explanatory analogies in an impersonal idiom, whereas the latter understands it in terms of forces, couching its explanatory analogies in turn in a personal idio.
- \* Relating Western cosmological reflection and African cosmogonies, is not primarily a scientific or theological, nor sociological or historical problem as such, but in my opinion an epistemological problem, if our vantagepoint was the similarity in terms of the type of conceptuality employed. That is, the question about how two different sorts of claims to knowledge are to be related<sup>10</sup>.
- \* Within a post-modern, multicultural context, such an epistemological endeavour recognises the lack of a universal standard of rationality against which we can measure other beliefs or research traditions (cf Van Huyssteen 1997:38). This does not leave us with a radical relativism nor an easy pluralism. Our ability to make rational judgements and to share them with various and different epistemic communities also means that we are able to communicate with one another meaningfully through conversation, deliberation and evaluation.
- \* Visiting the thus related epistemic communities of Western cosmology and African cosmogonies, is not an ivory tower luxury, but spontaneously springs forth from what Metz (1993:20) calls the biblical "Verhaltensimperativ", that is, that one needs to be aware of those people outside of one's own field of vision. It could be interpreted as a demand for an education of acceptance, which in practice would develop learning opportunities and the ability to deal with plurality.
- \* The demand for an education of acceptance is characterised within the South African context by the concrete challenge of addressing Eurocentrism through Afrocentrism. Does this imply simply exchanging one "centrism" for another? No. Whereas Eurocentrism, in its most exaggerated form, makes a claim for the centrality of "Euro-

The words of Penoukou (1991:24) on Ewe-Mina society could serve as an example: "In Ewe-Mina society ... being is not thought of primarily in terms of essence, substance, nature, and idea, nor so much in terms of history and time as happens more in the West since Heidegger, but basically in terms of a relationship of community and solidarity. In other words, being is not so much contemplated as a speculative mystery, but it is unveiled in its 'to be there with', in an encounter which allows for wonder, the unthinkable, the unexpected, mystery".

I am here following Ernan McMullin (1981) in his very elucidating exposition of the question how cosmology should relate to theology.

pean" reality, knowledge and evaluation, and displaces other visions to the periphery, that is, marginalizing the "other", Afrocentrism emphasises a path to knowledge rather than the displacement of the other (cf Schiele 1994:150ff; Verharen 1995:65), resulting thus not in replacement nor displacement, but in acentrism (see footnote 9).

\* This challenge on the path to knowledge - in my opinion - should be holistically routed along the road of "encounters through dialogue", that is, "reflection with a face" (a "cognitive facelift" which is social learning that does not only further communication, transcend boundaries and widen horizons, but is also action orientated, and creates community.

Let us now visit the respective epistemic communities, firstly by exploring a specific African cosmogony (that is, telling the story of the Dogon people of Mali) and, secondly, by focusing on the similarities in the theory making process of the respective epistemic communities.

## 3 AT HOME AT THE STORY OF THE DOGON PEOPLE

The story of the Dogon of Mali is unusual in having developed an elaborate cosmogony and a highly complex cosmology (cf Griaule & Dieterlen 1991:83ff; Leeming & Leeming 1994:71-76; Ray 1976:24ff). But of special importance - in my opinion - is a remark made by Griaule & Dieterlen (1991) regarding the basis of the Dogon people's thought concerning the universe and humanity's place in it. The basis is the "sign", and in this regard, they state:

"... Within and beyond this totality of beliefs (of the Dogon people - DPV) appears a logical scheme of symbols expressing a system of thought which cannot be described simply as myth. For this conceptual structure, when studied, reveals an internal coherence, a secret wisdom, and an apprehension of ultimate realities equal to that which we Europeans conceive ourselves to have attained. The

<sup>&</sup>lt;sup>11</sup> Cf Peat's (1997:564-5) short but helpful exposition of the "animate world" and the "modern mind".

Is "centrism" - which was referred to in the previous paragraph - not directly opposed to a "holistic routing"? No, since Afrocentrism, although it is focussed on the self at the start, progresses beyond the self and the group to push to a point where it embraces the whole of reality, that is, becomes acentric.

See Knauth & Weisse (1995:245) for a brief explanation of the background and understanding of this concept, which was coined by Martin Buber and used in ecumepical circles by Hans Margull.

A "cognitive facelift" through social learning implies addressing psychological degradation and cultural disorientation.

Dogon, in this system of myth and symbols, are able to express a correspondence between their social organisation and the world order as they conceive it. For them social life reflects the working of the universe, and conversely, the world order depends on the proper ordering of society" (Griaule & Dieterlen 1991:83).

The cosmogony of the Dogon people of modern Mali provides a good example of incest in creation myths. It has been suggested by many anthropologists that such incest stories are an attempt to support particular kinship systems (Leeming & Leeming 1994:71). Such is the case with the Dogon cosmogony.

## 3.1 Their story

In the beginning, Amma the supreme god, existed alone and depended upon nothing but himself. Amma had the shape of an oval egg, made out of his four collarbones joined together. The bones divided the egg into four quarters containing the four elements - fire, air, earth and water - and the joints between the bones represented the four cardinal directions of space. The morphology of the cosmic egg thus contained both the substance and structure of the universe. Amma traced within himself the design of the cosmos and its future development by placing in the egg 266 cosmic signs. These signs manifested the creative thought of Amma, and they contained the structure, essence and lifeprinciple of all things. After making the 266 signs, Amma embarked upon the creation of the world. He placed the four elements and the Signs together with the seeds of plants and crops in a flat disk, and set the disk revolving between two cosmic axes. But as the disk began to spin, it threw out the water, drying up the seeds. The creation was a failure. Amma destroyed it and began again. This time he would make humanity the instrument for preserving the order and life of the world.

Amma began his second creation by placing a tiny seed grain, within himself, in the centre of the cosmic egg. Into the grain he spoke seven creative "Words", bearing the creative force of sacred speech. This caused the seed to vibrate seven times and to turn in a spiral fashion, extending itself in seven directions within the womb of the egg. The seven protrusions prefigured an anthropomorphic shape, the image of man, around which the world would be organised. The seventh projection, however, broke through its enveloping sheath and produced a separate segment which was shorter than the others, and incomplete. It represented the principle of incompleteness (imperfection, singularity, disorder) which together with the principle of completeness (perfection, duality, disorder) constitute the structure and dynamics of the Dogon.

Amma then transformed the egg into a double placenta. In each he placed a set of twins, male and female. Since every human being is descended from these twins, every human being is, in a sense, a descendant of a mother and a twin brother or father and a twin sister. Before the process of gestation was complete, one of the males, named Yurugu, became impatient and broke out of one of the placentas. He feared that Amma would not give him his female counterpart after birth. Feeling desperately alone and incomplete he could no longer wait for the completion of the gestation process, which took sixty years. When he tried to go back to the egg to retrieve his twin, she had been removed by Amma, who had foreseen Yurugu's revolt.

Unable to recover his twin, he revolted completely. He broke all the cosmic rules and tried to take over all the secrets of the universe for himself with the intention of creating another world. He traversed the area inside the cosmic egg in a spiral motion contrary to the original spiral direction and thereby imposed his own disorder upon the creative process. He declared himself to be as wise as Amma and capable of creating his own universe, for he knew that Amma had implanted within him the important signs, words and seeds of creation. He stole what he thought was the original seed grain, intending to create a new world of his own. But this seed turned out to contain only the seeds of inedible plants and insects. When Yurugu tried to utter the sacred words, he discovered that he lacked the special quality of speech with which to say them properly and thus launch a new creations Consequently, he burst forth from the celestial egg-womb, tearing off a piece of it as he went and taking it with him as he descended through the void below. Amma - who stood ready to reorganise Yurugu's destructive efforts - transformed the piece of placenta into the earth. With the addition of this new element, the world again took on the shape of a human figure. The celestial egg was the head, the lower placenta the hips and legs, and the space between represented the trunk and arms. Still intent upon acquiring his own twin, Yurugu copulated with the earth. In this way he acquired a "wife" as a substitute for his lost female twin. But, he unwittingly defiled the earth, for being Yurugu's placenta, it was also his mothers, and mating with it was therefore an act of incest. This made the earth sterile and dry and bereft of its creative potential. Amma - instead of destroying the now disordered universe - resolved to restore the disorder caused by Yurugu. He would sacrifice the other male twin, called Nommo, who shared the placenta with Yurugu and thus shared in the responsibility of his revolt. Amma strangled Nommo and scattered his dismembered parts in the four directions. In this way, Amma regained control over the creative words and signs located in the body of Nommo. By scattering Nommo's body

over the expanse of the celestial world, Amma was able to reimpose his own order upon it. After five days, Amma gathered together the pieces of the sacrificed Nommo and restored him to life, and made him master and ruler of the universe. From the parts of Nommo, Ammo also created four other Nommo spirits, whose offspring became the ancestors of the Dogon people.

Amma then sent Nommo and the ancestors down to earth in a great ark provisioned with everything needed to restore and fructify the Earth and to sustain the human race: all species of animals and plants and all the elements of human society and culture. As the ark descended, Nommo shouted out Amma's creative words. In this way, the creative word was transmitted to Earth and made available to all humanity. Upon landing, Nommo stepped out of the ark and placed his foot on the soil. In this manner, he demonstrated his dominion over the Earth, and he impregnated it with Amma's creative signs.

Meanwhile, Amma transformed Yurugu into an animal called the Pale Fox. Solitary and incomplete, and always in revolt, the Fox now wanders over the surface of the Earth in fruitless quest for his female soul. The Pale Fox is the forerunner whose steps reveal the dangers humanity must avoid. In the course of his wandering, the Pale Fox guides humanity through the mysteries of life by the tracks he leaves on the ground, which are interpreted by the Dogon diviners.

Amma's final act of restoration was the sending of rains to the Earth and the performance of another sacrifice to purify and revitalise the soil. This time Amma sacrificed one of Nommo's offspring, named Lebe. Later, Amma restored Lebe to life in the form of a snake, while his bones remained buried in the ground, where they continue to fructify the land. From this time onward, humanity began to cultivate the land and spread out over it in increasing numbers. Aided by Nommo, humanity continues to follow the way originally blazed by the Pale Fox, the miscreant forerunner of human civilisation.

Of all the creation stories of Africa that I have read, I find the story of the Dogon people simply one of the most splendid stories<sup>15</sup> and apart from that, an excellent example to use for the indication of features common to traditional African and modern Western thought in the process of theory making<sup>16</sup>.

Two other very interesting cosmogonies, however, which I also would like to mention, is that of the Kwawu people of Ghana (see Bartle 1983) in which the universe has three souls, and the Sisala people also of Ghana (see Tengan 1991) in which the land is understood as a being in a relationship.

Leeming & Leeming (1994) consists of a collection of creation stories, including apart from Africa - stories from ancient civilisations from Sumer and Babylon to Egypt, Greece and ancient Rome, from India, China, Japan and Indonesia, as well as

# 4 SPENDING (THEORY-MAKING) TIME IN THE EPISTEMIC VILLAGES

The stories of the theory-making process: A comparison of features common to modern Western and traditional African thought.

What the theoretical reflection, which characterises the modern Western scientific approach, is all about, can be explained in terms of general propositions. These propositions give an indication of the nature and function of theoretical thinking. In formulating these eight propositions, I am - at the same time - not only incorporating relevant elements of the creation story of the Dogon people, but will also be referring to the broader context of the most salient features of traditional African thought.

# 4.1 A Comparison<sup>18</sup>

a. In atomic theory of matter, just as in the process of theory-making of gods/spirits, the quest for explanatory theory is basically the quest for unity which underlies apparent diversity; for simplicity underlying apparent complexity; for order underlying apparent disorder; for regularity underlying apparent anomaly.

the mythological traditions of Native Americans, the indigenous peoples of Australia and Polynesia.

For the following exposition, I am greatly indebted to the work done by Robin Horton (1993: 197-258) of the University of Port Harcourt, Rivers State, Nigeria.

Before turning to such a comparison, the qualified approval and criticism of Kwame Appiah (1992:116ff) on such an undertaking, specifically on the earlier publications of Horton, in which he compares Western scientific reflection with traditional African thought, should be taken seriously. Appiah signifies his approval of assimilating the theories that underlay traditional African thought to those that are engendered in the sciences, because both are explanatory systems of belief that share the problem of underdetermination. Appiah (1992:120) approves of Horton's basic thesis that the theories in the two domains are similar in crucial aspects. Both share the purposes of explanation, prediction and control. He, however, warns that in this very analogy there is much that is misleading. Distortion, odd equations, the lack of functional explanations are all very real dangers that ought to be taken seriously, especially in terms of indicating key differences (such as the "open" and "closed" cognitive worlds of modern cultures and traditional cultures respectively, which Horton indicates, but which Appiah rejects). Appiah's (1992:127-8) emphasis in this regard, following Evan-Pritchard, on the significance of the social organisation of cognitive strategies over against individual cognitive strategies, which characterises traditional religion and the sciences respectively, as well as the role of orality and literacy, is convincing.

- b. In atomic theory of matter, just as in the process of theory-making of gods/spirits, the process places things in a causal context wider than that provided by common sense.
- c. In atomic theory of matter, just as in the process of theory-making of gods/spirits, we find that common sense and theory have complementary roles in everyday life.
- d. In atomic theory of matter, just as in the process of theory-making of gods/spirits, levels of theory vary in relation to context.
- e. In atomic theory of matter, just as in the process of theory-making of gods/spirits, we find that in the theory-making process all theory breaks up the unitary objects of common sense into aspects, then it places the resulting elements in a wider causal context. That is, it first abstracts and analyses, then it reintegrates.
- f. In evolving a theoretical scheme for atoms and gods/spirits, the human mind is constrained to draw inspiration from an analogy between the puzzling observation requiring explanation and certain already familiar phenomena.
- g. Where atomic and Gods/Spirits theory is founded an analogy between certain puzzling observations and other familiar phenomena, only certain aspects of these phenomena are incorporated into the resulting model.
- h. The theoretical model of atoms, just like those of gods/spirits, once constructed, is developed in ways which sometimes obscure the analogy on which it was founded.

# 5 ATOMS AND GODS IN A DIALOGICAL ENCOUNTER OF AN EPISTEMIC KIND. THE PEDAGOGICAL CHALLENGE IN A MULTICULTURAL CONTEXT

"Cosmology and spirituality cannot be separated"

The tentative framework as pedagogical challenge for the dialogical encounter of Western cosmology and African cosmogonies, takes its lead in what I would like to call a "creation-centred" approach. This approach is:

- (a) methodologically a "presuppositional activity" (a term coined by Keith Ward) and not deductive nor inductive, that is, it picks out and organises the primary data in a particularly imaginative way, like constructing a pattern into which the world can fit, from the creative extension of a number of clues.
- (b) structurally moulded on the four stages of the great mystic-prophet of the thirteenth/ fourteenth century, Meister Eckhard<sup>19</sup>
- (c) determined by the conviction that humanity (read spirituality) and the physical world (read cosmological reflection) that gave us birth, belong inextricably together.

If then we accept (see "Presuppositional baggage") that:

- \* reality is stranger and even more multi-layered than we could have imagined, and
- \* that science can indicate beauty and symmetry in nature and offer ways of improving our lives but cannot induce worship nor promise self-fulfilment, and thus does not have the last say, and
- \* that relating Western scientific (cosmological) reflection to African cosmological reflection is primarily (but not only) an epistemic "problem"<sup>20</sup>, and as indicated in the foregoing conceptual similarity in

Should Cheikh Diop's influential two cradle theory be taken seriously in this regard? In his proposed theory, Diop (1974:111; cf Diop 1996:50ff, 109ff, 119ff) states that the "history of humanity will remain confused as long as we fail to distinguish the two early cradles in which Nature fashioned the instincts, temperaments, habits, and ethical concepts of the two subdivisions before they met each other after a long separation dating back to prehistoric times". I do not think so, following Appiah. Appiah (1992:101-2) raises justified criticism, stating that the lack of founding texts and the fact that there are no direct or continious tradition, makes this a very dubious and limited undertaking.

I find - within the context of reflection on cosmology and the teaching of a "functional cosmology" - the "four-stages" suggestion of Matthew Fox (1982:74ff) in his exposition of "Creative teaching" helpful and convincing. The four stages are: 1. Via Positiva (Falling in love with creation, its beauty, its delight, its cosmic connections, its brilliant expression in human creation, its history, its ongoing character); 2. Via Negativa (Letting go of creation in order to let be, to learn reverence, to sink into nothingness, emptiness, darkness to find there too a living God whose language is silence); 3. Via Creativa (Birth, which happens only and always ex nihila and represents the culmination of divine and human energies); 4. Via Transformativa (To bless or curse with our creativity, to be agents of sadism or masochism as much as agents of beauty and creation with the divine gifts of our imagination. Therefore, to ensure that our birth is for a New Creation, we channel our energies into social justice and compassion, that is, the Biblical directions for personal and social transformation).

the theory-making process - that such an endeavour produces promising directives, then the question is: how can such a "dialogical encounter" be structured in terms of a curriculum, enabling us, as "created co-creators" (a term coined by Philip Hefner), who live and reflect on the meaning of our existence within a pluralistic context, to produce a meaningful and fruitful conversation, enhancing acceptance and understanding? I now turn to such a suggestion, focusing on broad outlines in terms of the content chosen on the basis of the foregoing exposition.

# 6 DIALOGICAL ENCOUNTER IN A MULTI-CULTURAL CONTEXT

How am I to understand the remarkable fact that the physical world is also the carrier of beauty? (Polkinghorne 1995:8)

The following questions could serve as pointers for the dialogical encounter, advancing from an "Existential orientation" and moving to a "Historical orientation", subsequently to a "Cosmological orientation" and finally to an "Epistemological orientation", from which "Life in community" can be discussed as well as the ultimate imperative be formulated, namely: "What is expected from me/us?". It is precisely this "ultimate imperative" that keeps the dialogical encounter open towards "transformation" and thus to the future.

- \* From the vantage point of an "Existential orientation", the dialogical focus will fall on our "creatureliness", that is understandings and expressions (for example poetry, music, architecture) of the "I", the "body" and "connections".
- \* In the dialogical focus of "Historical orientation", the leading question may be: "Where do we come from?", addressing contextual as well as transcendental perspectives from written as well as oral texts.
- \* The existential and historical orientations should lead naturally to the formulation of a "Cosmological orientation". It may be explored with questions like: "How do I/we see/understand/experience ourselves in the world 'we are part of'/we are in'"? Thus addressing elements of creation such as beauty, vastness, connections, physics etcetera as well as metaphysical perspectives on God/supreme beings/spirits.
- \* The cosmological perspective begs the subsequent question, namely: "Why and how do I/we say what we believe in?", that is, the question of an "Epistemological orientation". Such an orientation demands clarity at the same time of perspectives on "revelation" (texts, traditions etcetera).
- \* Following from the epistemological orientation and before turning to "Life in community", it might be very feasible at this point to

address the converging lines of these questions within the troubling existential questions of pain, fear, death, sin, nothingness, brokenness etcetera.

- \* How all of these relate to and its significance for life in the community (values, perceptions etcetera) should on the one hand then be addressed, whilst simultaneously on the other hand the soteriological dimension (that is, the question of the role and significance of redeeming figures) should be integrated with these questions.
- \* The integrated answers to the question of life in the community and the significance of redeeming figures should lay the foundation for construing a vision for transformation and the future (that is the question: "what is expected from me/us to bring about a "better" world"). As in the previous question where life in community and the redeeming figures belong intrinsically together, so it is with the question of transformation and the understanding of the significance and role of the Spirit(s).

Where this dialogical encounter – in focussing on features common to modern Western and traditional African thought, and consciously in search of ways to bridge the apparent irreconcilable differences – can take us, and in which exciting and new ways the "other" will come into our vision, now remains to be explored by the readers in their specific contexts.

#### Consulted literature

Abraham, W E 1995. A Paradigm of African society, in: Kwame, (ed). Readings in African Philosophy. New York: University Press of America.

Appiah, K A 1992. House. In My Father's House. Africa in the philosophy of culture. New York: Oxford University Press.

Bartle, P F W 1983. The universe has three souls. Journal of Religion in Africa XIV (2) 85-114.

Bediako, Kwame 1995. Christianity in Africa. New York: Orbis Books.

Bolle, Kees W 1987. s v Cosmology. The Encyclopaedia of Religion. New York: MacMillan.

Davies, P 1992. The Mind of God. New York: Simon & Schuster.

Davies, Paul 1995. Physics and the mind of God: The Templeton Prize Address. First Things, Aug/Sept (55): 31-35.

Diop, C A 1974. The African origin of civilization: Myth or reality. Chicago: Lawrence Hill.

-, 1996. Towards the African Renaissance. London: Kamak House.

Du Toit, C 1994 (ed). Theology and the New Physics. Pretoria: Institute for Theological Research.

- Du Toit, C 1996. The poverty of Western religious experience and the contact with African Spirituality. Pretoria: Unisa.
- Du Toit, Cornel 1997. The dominating world-views of science and technology: Responses from Christianity. Scriptura 61 (2): 151-165.
- Dyrness, W A 1990. Learning about theology from the Third World. Grand Rapids: Zondervan.
- Fox, M 1982. Educating for Transformation: The spiritual task. *Horizons* 9 (1): 74-80.
- Griaule, M & Dieterlen, G 1991. The Dogon, in: Forde, Daryll (ed). African Worlds. Studies in the cosmological ideas and social values of African people. Oxford: Oxford University Press.
- Hawking, S W 1988. A Brief History of Time. London: Bantam Press.
- Horton, R 1993. Patterns of thought in Africa and the West. Cambridge: Cambridge University Press.
- Knauth, T & Weisse, W 1995. Between religious speechlessness and pluralism. Scriptura 55 (4): 237-247.
- Leeming, D & Leeming, M 1994. A dictionary of creation myths. New York: Oxford University Press.
- McMullin, E 1981. How should cosmology relate to theology?, in: Peacocke, A R (ed). The Sciences and Theology in the twentieth century. Stocksfield: Oriel Press.
- Menkiti, I 1984. Person and community in African traditional thought, in: Wright, Richard A (ed).
- Metz, J B 1993. Wenn wir uns selbst unheimlich geworden sind... Die Christen und die Fremden, in: *Publik-Forum*, 29 Januar.
- Peat, F D 1997. Blackfoot Physics and European minds. Futures 29 (6): 563-573.
- Penoukou, E J 1991. Christology in the village, in: Schreiter, Robert J (ed). Faces of Jesus in Africa. New York: Orbis Books.
- Polkinghorne, J 1995. Serious Talk. Science and religion in dialogue. Valley Forge: Trinity Press.
- Ray, Benjamin C 1976. African Religions. Symbol, ritual, and community. New Jersey: Prentice-Hall.
- Schiele, J H 1994. Afrocentricity. Implications for Higher Education. *Journal of Black Studies* 25 (2): 150-169.
- Shutte, A 1993. Philosophy for Africa. Cape Town: UCT Press.
- Tengan, E 1991. The Sisala universe: Its composition and structure. *Journal of Religion in Africa* XX (1): 2-19.
- Van Huyssteen, W 1993. Theology and Science: The Quest for a New Apologetics. The Princeton Seminary Bulletin XIV (2) New Series 113-133.
- -, 1997. Essays in Postfoundationalist Theology. Grand Rapids, Michigan: Eerdmans.
- Verharen, C C 1995. Afrocentrism and acentrism. A marriage of science and philosophy. *Journal of Black Studies* 26 (1): 62-76.

Wiredu, K 1984. How not to compare African thought with Western thought, in: Wright, R A (ed). *African philosophy*. New York: University Press of America.