From 'machine-world' to 'God-world' - world pictures and world views [1]

J.J. Venter
Dept. of Philosophy
Potchefstroom University for CHE
POTCHEFSTROOM

Abstract

This article mainly consists of an analysis of the successive historical expansions of the mechanistic and the organistic world pictures into world views. In conclusion the presently popular form of the organistic world view, New Age occultism, is compared with the 'traditional' African world view. In this way the author attempts to realise three different aims: firstly to show how world pictures, developed within specific disciplines, are transformed into world views by expansionary application in other disciplines and/or cultural areas; secondly that occultism is regaining intellectual respectability by presenting itself as part of the 'new' organistic, scientific view of the world; and thirdly that there are strong similarities between the new Western occultism and the traditional African world view (which opens up possibilities of synthesis between these two).

1. INTRODUCTION

We are faced with a surge of occultism today. The new occultism, although showing some oriental traits, has its roots squarely in the Western intellectual tradition. It is part of the organistic reaction to the mechanistic world view, and actually only a return of an earlier, organistic, and at times, occultist way of thought.

One aim of this paper is to show how *expansionary application* of what was originally only an explanatory *picture* within a specific discipline, transforms that picture into a full-blown world view for the practice of science. Historically, this also implies the supplanting of the *mechanistic* by the *organistic* view in intellectual circles.

* *World picture* is used in a restricted sense in this article. In its expanded meaning the German equivalent, *Weltbild*, includes in its meaning representations of the origin and structure of the world, its creatures, and even social relationships (cf.

[1] The financial assistance of the Institute for Research Development of the HSRC is hereby gratefully acknowledged. Opinions expressed and conclusions drawn are those of the author and do not necessarily reflect those of the IRD or the HSRC.

Griffioen, 1989:84). In this context, however, we use it in the sense of a scientific world picture, such as the Newtonian representation of the world, with special accentuation of the pictorial aspect, i. e., the term is used to convey a picture of something within human experience, namely, the physical, astronomical universe, which is not fully contained in human experience.

- *World view* refers to "a total vision of life, implying certain key categorical distinctions about the world and giving its adherents a fundamental orientation to life" (Griffioen, 1989:84). In this case the accent falls on *view* - a total vision, with pictorial, conceptual, practical power, and even commitment aspects.

A further aim is to show that *occultism* regained intellectual respectability by being part and parcel of the new organistic world picture, which has its roots in twentieth-century scientific theories (specifically the new physics). *Occultism simply presents itself as a kind of spirituality which is in keeping with contemporary science* (and thus takes a spiritual ride on the wave of Western faith in scientific power), and through this, as the alternative to the spiritual emptiness (exposed in the practical failures) of the mechanistic world picture.

Finally, we intend to show that there are strong ***similarities*** between the traditional *African* world view and the *organistic* one in its occultistic form. This is actually only an addition to show the relevance of the world view debate for the African situation; for apart from the fact that the mentioned similarities pose a challenge to the Christian academic, it is also true that philosophising in Africa calls for a kind of Afrocentrism, as Gericke (Anon., 1991:7) has so aptly argued.

2. FROM MONANTHEUIL TO SUMNER: THE GROWTH OF THE MECHANISTIC WORLD PICTURE INTO A WORLD VIEW

2.1 Ancient philosophy

The ancient Greek philosophers pictured the world as a living being; hellenistic Neo-Platonism saw it as an emanation from the Supreme being, whatever he was called. The latter theory was especially popularised into an occult religion in the *Corpus Hermeticum* - occultism and the idea of 'nature' as a 'living-being' mutually strengthened one another: it expressed the potential of the world to grow into perfection. This 'living-being'-picture was primarily used to explain the physical universe: all of 'nature', but especially astronomical entities were supposed to be alive, yet Aristotle

(whose teleological use of this picture was decisively influential) still distinguished quite clearly between nature (*physis*) and its imitation, culture (*techne*). Some medieval Christian philosophers followed the Greek concept of *nature*, which they combined with the Christian idea of the creator, and this led to the Roman Catholic conception of *nature* as the partner of God. The same picture is still found in Paracelsus's idea of living matter with its organizing Archeus (even though he rejected the Aristotelian hylemorphism) (Dijksterhuis, 1950:307ff). This world view implied that creative powers were structurally inherent in the world - this of course endangered the biblical distinction between God and his creatures.(cf Hooykaas, 1972:1-12).

2.2 The seventeenth century

In the latter half of the sixteenth century, however, a new world picture was invented: "*The world is a machine; it is the most purposeful and beautiful instrument*", says *H. de Monantheuil* in 1599 (Hooykaas, 1972:61). His more famous contemporary, *Johannes Kepler*, was switching from the one picture to the other at about the same time. Hooykaas argues that this new world picture was more in keeping with the biblical idea of creation, because it supposed the idea of an engineer or designer. This excluded both the organistic world picture (the idea that the world has designs of its own), as well as the materialism of the Epicureans (which bases all configurations of atoms on pure accident). Such was also the position defended by Basso, Boyle and others in the seventeenth century. According to Boyle (1627-1692), for example, God is directly involved, not only in the original creation of matter, but also in the order which determines the permanent mechanical behaviour of matter (Dijksterhuis, 1950:478). Hooykaas admits that this picture also allowed for a deistic interpretation, in which the engineer retires directly after the machine has started operating. This possibility - the one that won the battle in the end - is clearly implied even in a formulation of Boyle:

> (The universe) is like a rare clock ... where all things are so skilfully contrived that the engine being once set moving, all things proceed according to the artificers design. (In: McKay, 1974: cover.)

Their elder contemporary, *Descartes* (1596-1650) expanded and popularised the new world picture in defending the hypothesis that not only inorganic but also *organico-physical entities - excluding thought - are machines*. Note that the application of the initial picture or metaphor has expanded: it originated as a picture of the astronomical universe, explaining the motions of the heavenly bodies without ascribing souls or divine powers to them. But Descartes extended the picture to include the bodily

aspects of living beings (cf. Mason, 1956:134ff). Descartes was actually defending the excellence of thought in this way - the creativity of man, as Chomsky has it. The point he was trying to make was that animals are only machines (constructs of matter and motion), for

> ... never was a beast found which is so perfect, that he used any sign to make anything known to other animals, which has no relation to his passions, and there is no man so imperfect, that he doesn't do it ... I know that the beasts are often better than we are, but it doesn't astonish me, for this serves for me to prove that they act naturally and spring-driven, just like a clock, which shows the time better than our judgement can tell it to us (Descartes, *Oeuvres* 3.575-576).

But he had set an example of the expansion of a world picture outside its initial area of application - somebody else would soon take this further. *Julien Offray de la Mettrie* played games with Descartes's doctrine. On the one hand he attacks Descartes for stating that animals are 'only' machines; according to him, they exhibit the same ability as human beings to feel, think, communicate and reason, and are, therefore, "more than only machines" (Gunderson, 1963:64; De la Mettrie, *Oeuvres Philosophiques* 2.29-30) On the other hand he attacks Descartes for making man more than a machine - this, he says, is no more than a ploy to satisfy theologians, as *the human body is really only a very skilfully constructed watch, and there is no real distinction between thought and body:*

> I believe that thought is so little incompatible with organized matter, that it seems to be one of the properties on a par with electricity, the faculty of motion, impenetrability, extension, etc. (De la Mettrie, 1953:143-4.)

De la Mettrie thus proposes outright materialism as a defence for his mechanistic conception of man.

2.3 The eighteenth century

The mechanistic world picture was expanded once more in the eighteenth century, as can be seen from the *economic theories* of *Adam Smith*, the father of capitalist economic theory, and *Immanuel Kant's* philosophy of *history and politics*. Both these thinkers view the processes concerned (economic, cultural, political action) almost in La Mettrien terms. They presuppose a teleology of 'nature' which is more than mechanical, and rather consistent with an organistic picture of the totality. But the way in which nature goes about realising its plan is purely mechanical, and shows the influence of the gravitational equilibrium model of the astronomer Isaac Newton (who himself rejected the mechanistic picture precisely because it allowed for deistic and even atheistic interpretations (cf Dijksterhuis, 1950:314ff)).

2.3.1 Adam Smith

Adam Smith followed the organistic idea of the *harmonia praestabilita* of Leibniz in as far as the totality of the cosmos was concerned. He, however, believed that we human beings are not able to draw the implications of that for our practical life. Thus he distinguishes between God's final causality (nature leading the totality to its divinely determined goal) and human efficient causality (nature's instrument for reaching that goal). The latter is realised especially via selfinterest: if the individual takes the responsibility for selfpreservation and propagation of the species onto himself (Smith, 1976:292), and act conscientiously in this

> ... we necessarily pursue the most effectual means for promoting the happiness of mankind, and may therefore be said, in some sense, to co-operate with the Deity, and to advance, as far as in our power, the plan of Providence (Smith, 1976:166.)

Smith searches for a direct way in which we can distinguish right from wrong. This he finds in agreeability for the instincts and passions (sensualist hedonism) - reason is too indirect and utility-oriented to provide general rules (Smith, 1976:506). Self-interest is governed by the internal, imaginary-objective impartial spectator, judging on the basis of prudence (longterm self-interest) and justice (social interest) (Smith, 1976:130ff; 174ff; 213ff). Conscientious self-interest is the most important way to progress, for most of society is not acting on a rational level, but rather on the level of the passions of ambition and prestige (Smith, 1976: 41ff; 107ff; 114ff; 145ff). Society, he objects to his teacher, Hutcheson, does not need benevolence as its basis:

> Society may subsist among men, as among different merchants, from a sense of utility, without any mutual love or affection; and though no man in it be bound in gratitude to any other, it may still be upheld by a mercenary exchange of good offices according to an agreed valuation. (Smith, 1976:86.)

This we can only understand once we know that Adam Smith follows the tradition of Hobbes and Rousseau in accepting the contractual view of society - in Smith's case clearly based on an economistically interpreted contractual view of man. Man is by nature a hawker: he has the "propensity to truck, barter, and exchange one thing for another", i. e. to conclude contracts (Smith, 1950:15). It is the exchange of "good offices" which is the foundation of society. And it is the exchange of goods and services which provides the material base for all progress in society. Through the process of contracting, in which of course every party competes for his own interest, the "agreed valuations" are established: in the trade context Smith calls this the market price. But

the market price has a point towards which it tends, being pushed and pulled by buyers and sellers, namely real cost (which includes rent of land, wages of labour, and profits of capital) - the natural price. The Newtonian influence (mentioned above) becomes clear in the context of Smith's doctrine on the relationship between the market price and the natural price, and specifically in the metaphor of gravitation:

> The natural price, therefore, is, as it were, the central price, to which the prices of commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder them from settling in this centre of repose and continuance, they are constantly tending towards it. (Smith, 1950:60.)

This idea of a natural centre of gravity which works as an equilibrating force does not only apply to economics: it dates from Smith's earliest extant writings and was first applied to the scientific investigation as the re-establishment of disturbed equilibrium of the mind: the principle of agreeability, which we also find in his ethics (Smith, cf 1980).

2.3.2 Kant

Kant applies the same structure of a natural, organistic teleology, a conflict/competition model of progress, and a final, outomatic equilibrium as the positive outcome to politics and history. In his case, however, it is not the repeated ebb and flow between equilibrium and disequilibrium which is at stake, but a longterm struggle which finally ends in a self-sustaining equilibrium. But the conflictual process that leads to this is determined just as much by sheer mechanical necessity as the automatic, self-sustaining peace machine which is the outcome.

The natural destination of the human species, according to Kant, is progress towards perfection (which means that all the natural talents are to be developed) (Kant, 1975a:92; Kant, 1975b:35-45). This development is teleological, but it already appears as if teleology is executed mechanically here:

> It does not matter how we metaphysically conceive of the freedom of the human will; the appearances thereof, namely the actions of man, are determined under the force of natural law, precisely like any other natural event ... Individual people, and even whole nations, do not often think about the fact they, while striving every one in his own way and often in conflict with one another each for his own goal, unconsciously follow the goal of nature (which is unknown to them), as if they are on leading-strings, and are involved in the promotion of that which, if it were known to them, would not have much significance for them. (Kant, 1975:33.)

According to Kant it is conflict which guarantees internal freedom (in this he follows Machiavelli) and, through the pressure of necessary survival provisions, ensures cultural progress. Although reason is at work in this, nature takes care behind the screens that man has no choice but to use autonomous reason (Kant, 1975:36-9). But as is continually the case with Smith's competitive, contractual society, so also but once and for all, in some Kantian new Jerusalem is it with Kant's conflictual view of history and politics: a situation develops in which war becomes impossible, and conflict of interest is nicely embedded in a set of contractual rules which balances pressure with peace:

> All wars are, therefore, so many attempts (truly not in the intentions of the people but in those of nature), to establish new relationships among states. ... until in the end, in part by structuring of the best possible legal order, in part by communal external agreement and legislation, a situation is established which maintains itself analogously to civil society, just like an automat. ... the barbarous freedom of the already established states ... necessitates our species to find, in addition to the in itself salutary resistance of many states, a law of equilibrium and a united force to support such law; that is, to impose a cosmopolitanistic situation of public state security; one that is not totally without danger, so that the powers of man would doze off, but also not without a principle of equality for their interaction, so that they will not disturb one another. (Kant, 1975b:44.)

In Kant, reason is the capability of autonomous choice, evaluation, and the setting of goals, and is incorporated as such in the inevitable process of perfection of the human species. But the machine picture of the world, here (as in Smith) melted into the motive of conflict/competition (the expression of the passions of greed, ambition, selfishness), neutralises this autonomy: cultural progress, political relationships, a league of nations - all are the products of and sustained by a mechanism, based like a clockwork or a chemical balance, on the gravitational equilibrium model. And it is more than figurative speech here, for the processes involved are construed as automatic and inevitable.

2.4 The nineteenth century

Without analysing them intensively, I may add that the mechanism of a *survival struggle* was adopted by *Darwin* via *Malthus*, and again used together with an equilibrium idea to describe or explain the origin of species. Interestingly, although some Darwinists love to pretend that Darwin succeeded in producing a fully materialistic theory, in which no place was left for any teleology, and, therefore, every event is accidental, it is clear from his own formulations of the natural selection principle, that he was still very

much imbued with the belief in progress and the teleological basis of it; so that, even though the mechanistic approach was dominating his thought, he did not succeed in eliminating it completely: he derives from Malthus the population principle which is transformed into the principle of natural selection - the latter takes care that "the vigorous, the healthy, and the happy survive and multiply" (Darwin, 1901:69-70).

The mechanistic approach provided Darwin with a model to biologize and mechanize ethics, by equilibrating shortterm and longterm instincts not very unlike Smith's impartial spectator balancing personal and social interests in his imagination. Darwin's theory of evolution provided *Freud* with an equally mechanistic theory of psychical equilibria and disequilibria, as well as an equilibrium theory of the ego (the point of balance between super-ego and id). It also provided the social Darwinists with the *cut-throat idea of justice and economic competition* - *Sumner* (who was, apart from a pioneer social scientist, paradoxically a trained presbyterian theologian) states it thus:

> [Many economists] seem to be terrified that distress and misery still remain on earth and promise to remain as long as the vices of human nature remain. Many of them are frightened at liberty, especially under the form of competition ... They think it bears harshly on the weak. They do not perceive that here "the strong" and "the weak" are terms which admit of no definition unless they are made equivalent to the industrious and the idle, the frugal and the extravagant. They do not perceive, furthermore, that if we do not like the survival of the fittest, we have only one possible alternative, and that is the survival of the unfittest. The former is the law of civilization; the latter is the law of anticivilization. We have our choice between the two, or we can go on, as in the past, vacillating between the two, but a third plan - the socialist desideratum - a plan for nourishing the unfittest and yet advancing in civilization, no man will ever find. (Sumner, 1934:56.)

According to Sumner progress (civilization) is the product of competitive selection, which is a natural law analogous to the law of gravitation.

2.5 Conclusion

To summarise: the mechanistic world picture came into being, probably using all kinds of sixteenth century 'automatic' toys and gadgets, but especially the clock and the balance, to explain the functioning of the astronomical universe; thus replacing the idea that this universe might be a living being. Understandably, before the advent of inorganic automats, it was difficult to explain the movement of the heavenly bodies otherwise than with reference to living beings, for they were apparently moving without any external source of movement. But as the organistic approach too easily flowed over into pantheism, the appearance of the automat, as an inorganic entity which

apparently moves itself, immediately provided a picture of the astronomical universe as inorganic yet self-moving, and presupposing an external 'engineer'. The association between the machine and the astronomical universe was therefore very strong from a Christian, creationalist point of view.

The machine picture was, however, soon expanded to explain the behaviour of that which originally provided the explanatory picture for the explanandum, i.e. living organisms, like animals and the human body, and soon afterwards, the human essence. From there it was expanded to explain social phenomena, and with the help of the conflict motive and Newton's law of gravitation, transformed into a model for the explanation of man's political, economic, emotional, and ethical behaviour, and finally to explain the progressive advance of species as well as justice. While self-movement was still one of the kinships between organism and automat, the organic and the inorganic were much further removed from one another than the machine and the astronomical universe. And as the machine picture was expanded into areas more related to human behaviour than to his structure, both the inorganic, physical aspect and the self-movement was absent from the new area of application. In fact, a principle of motion had to be introduced, namely the conflict motive, in order to realise the advance of civilisation as determined by the suppressed, but ever present, teleology. Thus the original picture was transferred from its kinship referent to areas of vague analogy, covering eventually every aspect of life - i. e. it was transformed from a world picture into a world view. And it became a world view which automatised the world and society - practically an atheist one, which immanentised salvation in terms of progress towards an automatic equilibrium.

This transformation had one important methodological implication, already recognised by *Hobbes*, who in 1642 used the mechanistic world view in his analysis of society. Machines can be taken apart and reassembled without much apparent damage to their parts. This, of course, is not the case with an organism. But wherever an organism or a social community is treated as if it were a machine, scholarly study will take place according to the assemble-disassemble-pattern:

> For everything is to be understood by its constitutive causes. For as in a watch, or some such small engine, the matter, figure, and motion of the wheels cannot be known, except it be taken insunder and viewed in its parts; so to make a more curious search into the rights of states and duties of subjects, it is necessary, I say, not to take them insunder, but yet that they be so considered as if they were dissolved ... (Hobbes, 1978:98-9).

In this context practising medicine became a question of isolating some physical trouble-part and 'repairing' or 'replacing' it (whilst the suffering person disappears

from the scene). Fluctuations on the economic front are handled by adjusting some regulating 'screws' (forgetting about the complications of the individual home owner or consumer). And future shock (intolerable acceleration of change) becomes an object of cybernetic self-regulation (as in Toffler, 1978:408ff).

With the return of the organistic world picture, the mechanistic model's conflict-equilibrium approach, as well as its disassembling-assembling method, would all come into the fire-line.

3. FROM ROMANTICISM TO CAPRA: THE RETURN OF THE ORGANISTIC WORLD VIEW

The slogan of Romanticism, 'Back to nature', has a much deeper meaning than may at first appear. It is not simply a call to return to the simple life of rural or primitive man, to flee from the rush and evil of urban life. One should realise that 'nature', in the (preceding) Enlightenment, referred to a man-centred yet man-transcending teleology, which, in some authors, may have expressed a longing for the Robinson Crusoe life style, but in others an idealisation of the refined ways of the nobility at the royal court. In the teleology of nature the original Greek idea of physis is still present, but now in a post-Christian, secular-humanist, rationalist, soteriological context. Romanticism hooked onto this concept of nature, but tried to rid itself of the rigidity of Enlightenment quasi-mathematical rationalism by stressing the Robinson Crusoe side of 'nature': instincts, passions, sense experience, within the surroundings of rural nature.

3.1 Bergson

Nineteenth-century Romanticism was to be the prelude to the rehabilitation of the organistic world picture in twentieth century intellectual circles. The famous French evolutionist Henri Bergson could no more accept that living species originated, one from the other, by purely mechanical means. Instead he finds the *élan vitale* (the life impulse) to be the prime mover of the evolutionary process. There is, however, no rectilinear development, no guaranteed progress (Bergson, 1922:89ff). The ways of the life impulse cannot be traced by calculative reason, but only by intuition; it finds its own ways, much like a creeper plant finds its branch-paths (1922:107ff). Bergson applied the opposition between the rational (which, for him, equals the mechanistic,

bit-by-bit, approach) and the intuitive (which intuits the 'parts' in terms of their meaning within a whole context), not only to our understanding of biological evolution, but to scholarship in general, and to the areas of ethics and religion (1922:196ff). Bergson was already, therefore, expanding the life impulse principle into non-biological areas.

3.2 Popular literature

At about the same time the idea that *the earth is a living being* was reviving on a more popular level in books by W.W. Atkinson, U. Buchanan, Richard Ingalese, O. Hashnu Hara, Joseph Ralph, James Robertson, R. Rimsdale Stocker, L. Dow Balliet, W. de Voe and Pauline E. Sayre, (to mention but a few who published in English) and especially Francis Swiney and a very influential South African lady, Johanna Brand. Both these women had been under the influence of the *Corpus Hermeticum* and other occultistic writings, and were predicting a time of peace with a much more 'feminine' approach. The polarist moment inherent in the (sometimes) dialectical, organistic approach was returning. (Cf Venter, 1990:59ff.)

3.3 Smuts

If we want to understand some of the present-day formulations of the organistic world picture, we cannot ignore the contribution of Jan Christiaan Smuts. It will be difficult to classify Smuts as either organistic or mechanistic, because he rejected both approaches and tried to find an alternative somewhere 'in between' the two extremes (a determination of his position which he might also reject).

Smuts rejected as "a mere concession to our ignorance" organistic vitalism's presupposition of an indwelling substantive force active in living beings, which he said was nothing more than a refinement of animism (believing in the inherence of semi-material spirits in everything) (Smuts, 1929:2). Mechanistic biological theories he also considered obsolete, being the remnants of an older tradition in biology (following mechanistic physics), which had not yet adjusted to the [then] recent revolution in physics. For Smuts this included Minkowski's theory of the space-time-whole, Einstein's relativity theory, and Heisenberg's uncertainty principle (cf. Smuts, 1932:3ff). The mechanistic picture had been driven out of its original area of application, but was still dug in in the secondary ones:

> Mechanist[ic biologists] are wrong in their view of life largely because they are wrong in their view of matter. They still cling to the obsolete billiard ball theory of matter. They still think, as physicists thought a generation ago, that matter, whether dead or living, consists of fixed unalterable particles whose movements and behaviour can be definitely determined on ordinary mechanical principles. ... Matter has become immaterial. It now consists of clusters of fickle events, and not of hard, impenetrable, unalterable entities. Matter is a flexible scheme, in which things remain only as averages, while their details are in a state of flux and change. ... The material view of matter is gone, and with it the mechanistic view of life. (Smuts, 1932:4.)

Although Smuts still accepts the fruitfulness of a physicalist approach concerning details of life, he does not believe that the mechanistic view of life as such need follow from this. For - and this is where his famous *holism* becomes significant - life is more than such detailed reactions, and living things do behave differently from the non-living physical and chemical reactions to which they are in the last resort reducible (1932:4). In fact, it is the other way round: the elements of matter are rather more like living beings, being divisible into 'genera' and 'species', and also subject to the principles of descent and natural selection (1932:5). This behaviour points to the evolution of the total universe as the (paradoxical) negation of the second law of thermodynamics (predicting the rundown of energy-efficiency, like a clock wound up long ago) a universe on the upgrade through millions of years, from electrons and protons to matter, from inert matter into organisms, from lower organisms to intelligence, and "finally the crowning glory of the human soul or personality making for the City of God" (Smuts, 1932:5). What could the solution of this paradox be?

For Smuts the inherent cosmic creativity which defies the second law of thermodynamics is to be found in wholes:

> For a whole is more than the sum of its parts or constituents. When elements, parts, constituents differentiate from an undefined whole, they become creative, they produce more than they themselves are. Creation remains the keyword of the universe, but we have to transform the traditional concept and to base it more securely. The rise and progress of wholes would necessarily mean an advancing creative order of things, such as the evolutionary universe of science appears to be. The category of the whole or Holism therefore seems to supply the key for which we are looking. It is the very antithesis of Mechanism. A mechanism is a combination of independent unalterable parts, in which the aggregate is the exact equivalent of the parts, no more and no less. ... The real universe is holistic ... In a whole the parts or constituents are not independent entities ... [they] are under the influence of each other as well as the whole which they form ... (Smuts, 1929:6).

Smuts presents us with the abstract concept of *Holism* for the solution of the paradox that the universe, also in its material aspect, seems to contradict the second law of thermodynamics; i. e., had the world really been a machine, it ought to have been

running down, but exactly the opposite is happening. Even in the inorganic world we find the creativity of wholes (1929:7; 1932:12ff). Smuts (1929:8) supposes a whole hierarchy of wholes, more complex wholes being the 'emergents' of less complex ones:

> From this very complex whole new characters and properties arise as emergents. In the way of characters, activity, and behaviour there is far more in this organic whole than there is in the material parts constituting it. This more, this emergent surplus, is life. Life is not in its parts, but arises from the synthesis of the parts, and appears in new emergent qualities and modes of behaviour. *Life is nothing but the emergent behaviour of certain advanced types of wholes* [italics added].

Thus life is, according to Smuts, still no more than an aspect or way of functioning of matter. His discovery is a metaphysical one: the more complex the organisation of matter, the more creative it is. Smuts's holism works by doubling analogical thinking: viewing the elements of matter as wholes reminiscent of living wholes, and then expanding the creativity of material wholes to living wholes through increasing complication. Smuts still refers to natural selection (even in material entities) and the restoration of equilibrium in organic beings, and has clearly not discarded the idea of progress. In the process of concept reformation, which Smuts had started, these terms would soon be discarded, or limited in their application. This is very significant for our understanding of the New Age Movement.

3.4 Deviation: Hegel

The holistic approach is inherent in the organistic world picture - although he had no name for it, we already find it early in the nineteenth century in *Hegel*. Hegel, in spite of his rationalism, could not accept the eighteenth century mechanistic world picture. He constantly objected to the separation of concepts from one another, and tried to find their organic unity by deducing them from one another. According to him, the concept is a *living* thing (cf. Hegel, 1969, I:17,21,97). He uses the dialectical approach precisely to give expression to the living growth of the concept: just as the adult organism is not the same as the seed, and yet what is in the seed is disclosed and inherent in the adult; so also, and primarily so, with the concept (1969, I:21). This is what motivates his criticism of the *principium identitatis* in logic (1969, II:35-80). And (in contrast to a machine), a living organism cannot be disassembled and reassembled: its members only function as parts of a *whole*, and decompose almost immediately when removed. Hegel's idea of the cosmic process is one in which the Idea or Concept discloses itself by unfolding into ever more encompassing wholes:

> As externality the living thing is *capable* of such relationships [mechanical, chemical, whole and part], but to that extent it is not living existence; if the living thing is taken as a whole which consists of parts, as a thing such that it is subject to mechanical or chemical causality, as mechanical or chemical product ... then Concept is taken as external to it, it is taken as something *dead*. Because Concept is immanent in it, the *teleodetermination* of the living thing is to be taken as *inherent*. ... This objectivity of the living is *organism*; it is the *means and instrument* of the goal, fully goal-determined, since Concept is its substance; it is ... realised goal .... Outwardly the organism is a plurality not of *parts*, but of *members*, which as such only exists within the individuality; they are separable, to the extent that they are external, ... but in as far as they are separated, they return to the mechanical and chemical relationships of general objectivity. (Hegel, 1969, II:476.)

The difference between Smuts and Hegel is that for Smuts it is the wholes which are creative, also of life, whilst Hegel assumes that it is the life (of the Concept) which is creative, and produces the wholes.

3.5 Mussolini

Wherever the organistic picture took root, some kind of living whole had to be found as explanatory for the functioning of its members. Of course, our human tendency to expand the application of our pictures and symbols into areas more and more unrelated to their original application can also be seen in the history of the organistic world picture: the living wholes found need not be organisms in the ordinary sense of the word. The Italian dictator, *Mussolini*, found good use for Bergson's organistic world picture, as transposed by Sorel, by defining the *state* as the focal point of the organic whole:

> There is no way of exercising a spiritual influence in the world as a human will dominating the will of others, unless one has a conception both of the transient and the specific reality on which that occasion is to be exercised, and of the permanent and universal reality in which the transient dwells and has its being. To know men one must know man, and to know man one must be acquainted with reality and its laws. There can be no conception of the State which is not fundamentally a conception of life: philosophy or intuition, system of ideas evolving within the framework of logic or concentrated in a vision or a faith, but always, at least potentially, an organic conception of the world. (Mussolini, 1935:7-8.)

Mussolini more or less follows Bergson in his distinction between the organically spiritual (which creates itself, transcends space and time, is universal, national, permanent, self-sacrificing, and moral) and the materially physical (which is subject to natural law, individual, egocentric, and short-lived). Life finds its true expression only within the state (Mussolini, 1935:10ff), which is consciousness, conscience and general will all together. Although Mussolini (1935:9) believes that war is ennobling because

life is action and struggle within the poles of love and hate, white and black, good and evil, he expects no progress anymore: we have to live by tradition within the ebb and flow of evolution. The state creates the nation by giving it the will to live and the will to power (1935:12ff). Having defined the state as *the* organism, the fascist doctrine transformed the organistic picture into a world view:

> Fascism, in short, is not a law-giver and a founder of institutions, but an educator and a promotor of spiritual life. It aims at refashioning not only the forms of life but their content - man, his character, and his faith. To achieve this purpose it enforces discipline and uses authority, entering into the soul and ruling with undisputed sway. Therefore it has chosen as its emblem the lictor's rods, the symbol of unity, strength and justice. (Mussolini, 1935:141.)

3.6 The New Age Movement

Not only the Mussolinis found their cue in the organistic world picture. Various others, whose integrity is much less in doubt, also found this picture attractive for the expressing of a reality apparently not directly akin to living organisms. In spite of the fact that Fascism was one of its early offspring, *the organistic picture has become intellectually respectable again*. Following the lines of Smuts's holism, the dominance of wholes and the revolution in physics are combined with evolution to explain the progress of the universe. It has been expanded again into a full-blown world view, its prime exponent being the neo-romantic New Age Movement of which I shall discuss the basic characteristics (following Venter, 1990: 53ff) in the following paragraphs.

The New Age Movement accentuates the contemporary *cultural crisis* of the West. We are threatened by nuclear warfare, we have both inflation and unemployment, our environment is heavily polluted; people feel lonely and under stress. All these are practical results of the mechanistic approach. But we are also at the turning point of a cultural tradition which has landed up in a cul de sac; we ought to prepare ourselves for a new culture that is inevitably on its way. In astrological terms, we are on the bridge between the Age of Pisces and the Age of Aquarius. F. Capra gives us a thorough, organistic analysis of cultural transitions in the line of the Bonnetian catastrophism, as metaphorised in Toynbee and Sorokin, complemented by the Chinese *I Ching* philosophy (cf. Capra, 1984:1-36).

3.6.1 Polarist thought

Directly connected with the idea of a cultural crisis is the return of *polarist thought*: reality is supposed to be a system of oppositions: male versus female, rational versus intuitive, physical versus organic, left brain versus right brain, the oriental *Yin* versus *Yang*. According to the New Agers, Western culture has for the past two thousand years given preference to the harsher poles: the left brain, the rational, the competitive, the masculine, the physical. In the coming Age of Aquarius the more symphathetic values will be dominant: the right brain, intuition, co-operation, the feminine, the organic (cf also MacLaine, 1985:14ff; Capra, 1984:17ff).

3.6.2 Anti-substantialism

New Age thought is *anti-substantialistic*. Like Smuts they adjust their thinking to the new physics. The redefinition of mass in terms of energy implies that we cannot, on the level of micro-physics, think in terms of individual things as impenetrable mass; only energy processes following certain patterns exist (Capra, 1985:66ff). Everything is connected with everything else in a non-causal way, and everything mirrors everything else holographically (cf. Capra, 1984:72ff). MacLaine (1985:324) in fact approaches a kind of Leibnizian monadology in which the monads (cells) not only mirror the universe, but also the past:

> Every cell in your body is holding the energy of experience, not only from this lifetime, but every lifetime. We always have to keep in mind that our concept of linear time is too limited. Holographic time is the actual reality.

3.6.3 Universalist mysticism

This antisubstantialism is connected with a kind of *universalist mysticism*. This is where holism makes its appearance. According to Capra (who uses Lazlo's *systems theory* as a neo-Smutsian holism), all 'individuals' are systems which are parts of larger and larger systems. He finds the systems theory so attractive since it provides a model in terms of which we can think of living beings as processes rather than as substances. Such systems show two tendencies: a self-assertive one (by which it maintains its individuality to a certain degree), but also a self-integrating one (whereby it integrates itself into a larger whole as an organ or a member). The world is itself such a system, and the smaller systems cannot exist outside the larger ones. But each system has the

ability of Smuts's wholes to move beyond itself - a creative ability:

> The internal plasticity ... of living systems, whose functioning is controlled by dynamic relations rather than rigid mechanical structures, gives rise to a number of characteristic properties that can be seen as different aspects of the same dynamic principle - the principle of self-organization. A living organism is a self-organizing system, which means that its order in structure and function is not imposed by the environment but is established by the system itself. ... This does not mean that living systems are isolated from their environment; on the contrary, they interact with it continually, but this ... does not determine their organization. The two principal dynamic phenomena of self-organization are self-renewal - the ability of living systems continuously to renew and recycle their components while maintaining the integrity of their overall structure - and self-transcendence - the ability to reach out creatively beyond physical and mental boundaries in the process of learning, development and evolution. (Capra, 1984:290.)

3.6.4 Evolutionism

Evolutionism is part and parcel of New Age thought. But it here takes a non-mechanis tic form. The survival principle (the competition motive) associated with the mechanistic picture has fallen prey to the upswing of the feminine values (Capra, 1984:22ff), and the ability for self-transcendence has eliminated the mechanistic equilibrium-expectations. Unlike the closed system of a clockwork, which proceeds in accordance with the second law of thermodynamics (from order to disorder until equilibrium is reached), the living organism is an open system in continuous exchange with its environment (Capra echoes Smuts) - an exchange known as metabolism, through which it maintains its own order and even increases it. This process enables the living system to operate in a state of non-equilibrium, which is in turn necessary for self-organisation. It is an inherently stable but dynamic system, of which the stability lies in its structure (Capra, 1984:291-2). Capra does not totally reject the Darwinian concepts: he accepts 'adaptation', but says that this is only one aspect of evolution. The other one is *self-transcendence*: the creation of new structures and functions without any environmental pressures. Competition does exist, but rather in a wider context of co-operation amongst organisms. (1984:301-2.)

3.6.5 Pantheism

The levelled systems-idea easily invokes the thought that *the earth may be a living system too*, and with this also the revival of the ancient Gaia-myth, in which the earth is projected as the Mother-Goddess (which gave life to everything on it, and still

maintains them). Capra seems to take this new mythology seriously (1984:308-9). In fact, it is taken further, and related to non-Western ideas of the levels of mind, which ends up almost automatically in another important characteristic of the New Age Movement, namely *pantheism*. Capra's words are significant:

> In the stratified order of nature, individual human minds are embedded in the larger minds of social and ecological systems, and these are integrated into the planetary mental system - the mind of Gaia - which in turn must participate in some kind of universal or cosmic mind. The conceptual framework of the new systems approach is in no way restricted by associating this cosmic mind with the traditional idea of God. In the words of Jantsch, 'God is not the creator, but the mind of the universe'. In this view the deity is of course, neither male nor female, nor manifest in any personal form, but represents nothing less than the self-organizing dynamics of the entire cosmos. (Capra, 1984:317.)

That God is conceived of as the mind of the universe is an ancient Greek myth. Plato tried to improve on it by presupposing a higher god than the macro-cosmical mind. This kind of myth, in combination with the theory of evolution, cannot but lead to the idea that *man is a god* in himself. MacLaine, combining Neo-Platonism with evolutionism, says that the souls have turned their backs on divine power, and have therefore become stuck in the bodies of lower primates. Their only way of salvation is through evolution into higher and higher life-forms. In fact, the souls have evolved life in order ultimately to realise again their participation in God - they are creating themselves day by day. Transmigration of the soul makes its contribution to the purification of the soul, but given the soul's transgression of its own natural laws - it has become subject to the law of karma. (Some New Age Movement thinkers are heavily influenced by oriental thought.) Eventually man will realise that he is God in himself (Maclaine, 1985:265; 358-9).

3.6.6 Occultism and spiritism

One can expect that this kind of pantheism will lead to the acceptance of *occult powers in nature*, and the acceptance of transmigration will lead to *spiritism*, both of which we find very clearly in the New Age Movement. For, once we believe that the universe is filled with divine energy, and that it is reflected in every being, then one can argue that it may be possible to concentrate that energy into oneself by occult practices. And if we assume that the souls transmigrate, then communication with other souls through spiritistic means is to be expected. And if we assume that every cell in the body is animated and reflects the world holographically, then one can also expect that certain rituals may be followed to tap the memories of the cells, or to realign them with the

great world system. All of this and more is to be found in MacLaine and other New Age authors (less so in Capra, who refrains from occultism and spiritism). Capra, however, rather applies his theories to economics, health science, environmental studies, etcetera. In this way the organistic picture has again been expanded to include physics, biology, the health sciences (including psychology), politics, economics, environmental studies, and spirituality. A picture has again been developed into a world view. MacLaine (1985:420) formulates this in a few pregnant sentences:

> ... what the new physicists and ancient mystics were attempting to reconcile in their own minds: the reality of consciousness. That the universe and God itself might be just one giant, collective 'thought'. And that every bit of information stored in our own consciousness was cross-referenced with every other bit of information, not only in our own consciousness but in everybody else's. That the 'reality' of the physical universe was only holographic memory patterns in our minds. That time period upon time period lives on in the memory patterns of our mental and bodily consciousness. The hologram of that consciousness enables us to feel one with the universe and one with everything we have experienced. We are in 'reality' multidimensional beings who each reflect the totality of the whole. ... If I could know me, I could know the universe. As the new physics and the ancient mystics now seemed to agree ... that we are in fact only dancing with our own consciousness. ... We are *all* participating in the dance. When I began to see the world with carmic consciousness, the knowledge that we all create our own paths ... made me recognize the cosmic justice in everything. ... there was a purposeful good in everything ... The total understanding and realization of myself might take eons ... to accomplish. But when ... achieved, I will be aligned completely with that Divine Force that we call God. ... I *know* that I exist, therefore I AM. I *know* that the God-source exists. Therefore IT IS. Since I am part of that force, then I AM that I AM. To me, understanding spiritual principles is identical to understanding scientific principles. The two ... are searching for the same answer: What is God? ... As far as my own life is concerned, my higher self is with me every moment. When I get in trouble, I consult with it.

3.7 Conclusion

Note that the agreement between the new physics and 'ancient mystics' is stressed repeatedly in New Age literature. Thus, with the help of the new, organistic criticism (under the influence of new physical theories) of the mechanistic picture, ancient mysticism (and together with this, magic and spiritism), is given intellectual decency by riding the wave of Western scientism. In this way a new spirituality can be introduced into scholarship - the expansion of the 'living being'-picture to every aspect of life, introduces the divine. New Age criticism of 'scientism' has to be recognised for what it is: *pantheistic scientism criticising mechanistic scientism.*

The organistic world view will introduce the kind of spontaneous growth principle that we find in the works of D.H. Lawrence - one which does not allow for much logical

self-criticism . The 'internal creativity' of the cosmos will both imply a mystical approach to nature, enforce evolution as a soteriological science, and tend to repristinate towards (an impossible) neo-primitivism, which may misjudge the seriousness of the problems of a high-tech culture, and the need for a responsible reformational attitude towards it. (It is probably, in terms of the logic of organism, not surprising that D.H. Lawrence despised urban technological culture and preferred instinctual sexuality and primitive religions as the better alternatives.)

4. THE AFRICAN WORLD VIEW AND THE MECHANISM-ORGANISM DEBATE

In trying to find the essential characteristics of traditional African thought, we may generalise too much. Within the scope of this paper, it is not possible to individualise or even particularise the ideas to cover even a representative number of ethnic groups. I have rather tried to find common world view traits amongst a few groups who live far apart (without thereby implying that every trait identified occurs in every single ethnic group in Sub-Saharan Africa) - this is in the same line as Anyanwu's (1984a:77) search for the common epistemological presuppositions, although it goes somewhat further.

Within the generalising approach followed here, African thought will prove to be much nearer to the organistic model than to the mechanistic one. In as far as President Kaunda rightly lamented the substitution of Western values for good African traditions at the ICPCHE conference in Lusaka in 1987, we have to state that the organistic world view is inherently more dangerous for Africa than the mechanistic one, both because it has regained decency in intellectual circles, and because it shows several similarities with general tendencies in African thought. The former has received enough attention above; the similarities are important to focus upon.

4.1 Theism - Pantheism

The African conception of the Supreme God is dialectically theistic, in the sense that both his pervasive presence in and his distance from creation is stressed. In Karanga idiom: "God is in all things, and God is far, far away" (Aschwanden, 1989:210ff; cf. also Anyanwu, 1984b:163ff). In fact, one finds here a reverse anthropomorphism or even a theomorphic view of man and world, and God and the world are ultimately one (Aschwanden, 1989:211-2; cf. also Ruch, 1984:120ff;150ff). Usually the remoteness of God is

stressed possibly to account for the role of ancestors as near-causes and intermediaries (cf. for example Bourdillon,1987:277ff; or, about the Zulu: Berglund, 1976:42ff) but an explanation of God's religious remoteness will not detract much from his ontological presence as the source of everything. And exactly on this point the African traditional idea of God may approach New Age pantheism. Some Shona (Zimbabwe) and Zulu (South Africa) myths represent the man-woman-relationship as a likeness of the relationship between the Supreme God and the earth (cf. Aschwanden, 1989:26ff; Berglund, 1976: 33ff), whilst the Tallensi (Ghana) see earth as a living thing and the Ibo (Nigeria) represent it as mother (Parrinder, 1968:23), thus approaching the New Age Gaia myth.

4.2 Vital force

According to the basic thesis of P. Tempels (1953), in which he is followed by L. Apostel (1981), B.J. van der Walt (1978), Anyanwu (1984b), and (hesitantly by) Ruch (1984), the main category of African ontology is *vital force*. Vital force declines hierarchically, down from God, through the ancestral spirits and human beings, animals, plants and even inanimate things (Van der Walt, 1978:32; Parrinder, 1968:21ff; Ruch, 1984:145ff; cf also the power lineage amongst the Zulu: Berglund, 1976:246ff). This implies that the African ontology is in fact spiritualistic-organistic, and very close to that of Shirley MacLaine. Occult practices and divination are part and parcel of African life, because that is the way to acquire as much as possible vital force (which has a link with bodily health and strength; cf Parrinder, 1968:113ff).

4.3 Ritual re-enactment

The traditional African views history as *cyclical*, reflecting his nearness to, and dependence upon, primeval nature with its cycles of day and night, the moon, the seasons. Ritual re-enacts this cyclical history, and in this way strives to re-present the origin of the tribe in the original act of creation, thus mustering as much life force as possible (Ruch, 1984:108ff; Van der Walt, 1978:33-4; 1990:40ff). In this way 'universal' history can be reflected in the present, and we are faced with another analogue of New Age thought - that which MacLaine calls holographic time.

4.4 Ancestor veneration

Ancestor veneration is a well-known trait of African thought (Van der Walt, 1978:36-8; 1990:26). The traditional African's daily life is ruled by the spirits of his ancestors to such an extent that they take the place which the Christian would ascribe to God (as differentiated according to His three persons). Rituals, witchcraft and tradional medicine are all focused upon the 'divine' or 'devilish' influence which the spirit world has (for better or for worse; for good or for evil) upon a person's daily life (cf. Bourdillon, 1987:147ff;171-282; Aschwanden, 1989:126ff; Gelfand *et al.*, 1985:3-34). One could therefore use the term *worship* in stead of *veneration*, even though some Africans tend to protest that ancestors are only 'revered' not 'worshipped' (cf. Parrinder, 1968:24;57ff). Although this rather tends to bind the African to the past, whilst the evolutionary New Age organistic view would focus on the future, both these views recognise the presence of approachable spirits who have direct influence over our lives. This may be a point of contact between the two, and the modernising African may find it easy to cross the bridge to Western occultism.

4.5 'Holism'

The African view of man and society is *'holistic'* in a certain sense of the word: it does not contain basic Western distinctions such as theory versus practice, sacred versus profane, individual versus social, but intuites life as a totality (cf. Ruch, 1984:101-160; Anyanwu, 1984a&b). The vital force is both bodily and spiritual - these two are not opposed - for it is a force which the ancestral spirits possess in greater measure than ourselves, but which also determines our bodily health. The typical African, Van der Walt (1978:44) says, thinks in totalities, rather than in clearcut analytical categories and cause-effect-relationships (which makes this thought inherently anti-mechanistic). Amongst the Shona the unity of God is reflected in the wholeness and unity of the world (Aschwanden, 1989:123ff). And socially, the African is communalistic, in the extreme sense that the individual does not only have the infrastructure in common with his fellow tribe-members, but that his whole being depends on the community (Van der Walt, 1990:32ff; 45ff). Compare Leopold Senghor's description of this with MacLaine's understanding of man's place in the cosmos:

> *Senghor:*
>
> Thus the Negro-African sympathizes, abandons his personality to become identified with the other, dies to be reborn in the other. He does not assimilate; he is assimilated. He lives a common life with the other; he lives in a symbiosis ... 'I think, therefore I am' Descartes writes; ... The Negro-African could say: 'I feel, I dance with the other; I am ... (Van der Walt, 1978:39.)

MacLaine:

> Life itself seemed only symbolic of the soul, as though it were only thought essence which would ... never die. Life was God once removed. And everything was energy. Vibrating, pulsating vital *energy*. And that energy was *love* energy expressing itself in millions of ways until it finally understood the totality of itself. (Maclaine, 1985:363.)

> As the new physics and the ancient mystics now seemed to agree ... that we are in fact only dancing with our own consciousness. Everything we feel, think, and act upon is interrelated with everything everyone else feels, thinks, and acts upon. We are all participating in the dance. (Maclaine, 1985:420.)

Clearly, they are not very far from each other, although Senghor focuses on social relationships, whilst MacLaine is more concerned with cosmic ones.

4.6 Direct experience

Traditionally, the African lives by *direct experience*, near to his emotions, intuitions, and instincts. He is nearer to the Romantic experiential approach than to Kantian rationalism or mechanistic quantification (Anyanwu, 1984a,b&c; Van der Walt, 1978:42-4; 1990:38ff). Again this aligns traditional African thought with twentieth century irrationalism, for example Bergson's theory of the intuition, as Senghor (Van der Walt, 1978:43) has also realised. And the New Age Movement is drenched in this kind of irrationalism: their supposition of an inevitable cultural transition to an era of right brain dominance (or at least brain lobe balance) bears evidence of this (cf. Capra, 1984:1-37). So do the mystic, spiritistic and bodily experiences (the latter induced by acupuncture) of MacLaine and others. Within this kind of gnoseological context, the lines of division between theory and practice, and subject and object, for the New Age Movement become blurred, whilst Africa never had such a division:

> The African culture makes no sharp distinction between the Ego and the world, subject and object. In the conflict between the self and the world, African culture makes the self the centre of the world. ... every experience and reality itself are personal. ... Personal experience refers to the totality of man and his faculties. ... not ... to reason alone, imagination alone, feeling and intuition alone ... The truth of this experience is lived and felt, not merely thought of. ... The self vivifies and animates the world so that the soul, spirit, or mind of the self is also that of the world. (Anyanwu, 1984a:86-87.)

If one compares this quote with the previous one from MacLaine, the connection between *holism* and *experience* provides another similarity (of analogical coherence)

between traditional African and New Age gnoseology. Experiencing the totality is egocentric in both conceptions.

4.7 Conclusion

When one considers the very definite similarities between the traditional African life view and the organistic world view in its New Age form, this spells out a new task for the Christian university and college. The New Age world view is propagated as an all-encompassing spirituality (rejecting the sacred-profane-dualism adopted by many Christians), much like African spirituality (cf. Ruch, 1984:120ff; Van der Walt, 1978:34-5; 1990:28ff). More important, as MacLaine states, this spirituality is "identical with understanding scientific principles": it will therefore be preached (as is already the case), in the universities of the Western world, and through especially postgraduate students and academic conferences, be transmitted to our African universities. This new scientistic, pagan spirituality has no confessional discipline, no church authority which will prevent those who may differ in certain respects from becoming part of the movement. It propagates its ideas with the help of informal networks, in which a wide variety of doctrines may occur. It will certainly attract the African student, and may even alienate those who are still caught in the religio-cultural tensions (cf. for example Lagerwerf, 1987) of the recently converted from the Gospel. (Syntheses of traditional African ideas with Western ones are not uncommon: in the many independent Churches traditional religion is blended with Christianity; in the political arena communalism was blended with Western socialism; it is thus to be expected that New Ages ideas may be accommodated in the same way.)

Christians should not be seduced into a false choice between the mechanistic and the organistic world views. As pictures with limited applications, they may serve as explanatory metaphors, but expanded into world views, both of them produce reductionist, scientistic views of life and the world, which do not account for the pluriformity of the universe, and man's cultural responsibility in it. For the start of a Christian, critical analysis of these world views, the reader is referred to Hooykaas (1972), MacKay (1974) and Kriel (1988).

5. BIBLIOGRAPHY

ANONYMOUS. 1991. Professor Calls for Afrocentric Philosophy. *Bulletin of the Centre for Science Development*, 3(1):7. Jan/Feb.

ANYANWU, K. C. 1984a. The African World-View and Theory of Knowledge. (*In* Ruch E. A. & Anyanwu, K. C. 1984. African Philosophy; An Introduction to the Main Philosophical Trends in Contemporary Africa. Rome: Catholic Book Agency. pp. 77-99.)

ANYANWU, K. C. 1984b. African Religious Experience. (*In* Ruch E. A. & Anyanwu, K. C. 1984. African Philosophy; An Introduction to the Main Philosophical Trends in Contemporary Africa. Rome: Catholic Book Agency. pp. 161-176.)

ANYANWU, K. C. 1984c. Artistic and Aesthetic Experience. (*In* Ruch E. A. & Anyanwu, K. C. 1984. African Philosophy; An Introduction to the Main Philosophical Trends in Contemporary Africa. Rome: Catholic Book Agency. pp. 270-282.)

APOSTEL, L. 1981. African Philosophy: Myth or Reality? Gent : Scientific Publishers.

ASCHWANDEN, H. 1989. Karanga Mythology; An Analysis qf the Consciousness of the Karanga in Zimbabwe. Gweru : Mambo Press.

BERGLUND, A.-I. 1976. Zulu Thought-Patterns and Symbolism. London : Hurst.

BERGSON, H. 1922. Creative Evolution. London : Macmillan.

BOURDILLON, M. F. C. 1987. The Shona Peoples; An Ethnography of the Contemporary Shona, with Special Reference to Their Religion. Gweru : Mambo Press.

CAPRA, F. 1984. The Turning Point. London : Fontana Paperbacks.

DARWIN, C. 1901. The Origin of Species by Means of Natural Selection. London : Ward, Lock & Co.

DESCARTES, R. n.d. Oeuvres de Descartes, *eds.* Adam & Tannery.

DE LA METTRIE, J.O. 1774. Oeuvres Philosophiques. Vol. II. Amsterdam.

DE LA METTRIE, J.O. 1953. Man a Machine. Transl. by G. Bussey. Chicago : Open Court.

DIJKSTERHUIS, E. J. 1950. De mechanisering van het wereldbeeld. Amsterdam : Meulenhoff.

GELFAND, M., MAVI, S., DRUMMOND, R. B., NDEMERA, B. 1985. The Tradional Medical Practitioner in Zimbabwe; His Principles of Practice and Pharmacopoeia. Zambeziana 17 : Culture and Society in Central Africa, *ed.* R. S. Roberts. Gweru : Mambo Press.

GUNDERSON, K. R. 1963. Mentality and Machines (Essays on Mechanistic Philosophy). Ann Arbor : University Microfilms.

GRIFFIOEN, S. 1989. The World-view Approach to Social Theory: Hazards and Benefits. (*In* Wolters, A. M. *ed.* Stained Glass : World-views and Social Science, *et al.* London/N Y : Univ. Press of America. p. 81-118.)

HEGEL, G. W. F. 1969. Wissenschaft der Logik. (*In* Hegel: Werke, bd 5-6. Darmstadt : WBG.)

HOOYKAAS, R. 1972. Religion and the Rise of Modern Science. Edinburgh/London : Scottish Academy Press.

HOBBES, T. 1978. Man and Citizen, *ed.* B Gert. Atlantic Highlands (NJ) : Humanities Press.

KANT, I. 1975a. Mutmasslicher Anfang der Menschengeschichte. (*In* Kant, I. 1975. Werke in Zehn Banden. Darmstadt : WBG. Bd 9)

KANT, I. 1975b. Idee zu einer allgemeinen Geschichte in Weltburgerlicher Absicht. (*In* Kant, I. 1975. Werke in Zehn Banden. Darmstadt : WBG. Bd 9.)

KRIEL, J. R. 1988. Removing Medicine's Cartesian Mask; the Problem of Humanising Medical Education. Potchefstroom : IRS.

LAGERWERF, L. 1987. Witchcraft, Sorcery and Spirit Possession; Pastoral Responses in Africa. Gweru : Mambo Press.

MACLAINE, S. 1985. Dancing in the Light. New York : Bantam Books.

MAcKAY, D.M. 1974. The Clockwork Image; A Christian Perspective on Science. Downers Grove (Ill.) : Inter-Varsity Press.

MASON, S. F. 1956. Main Currents of Scientific Thought. London, R & KP.

MUSSOLINI, B. 1935. The Doctrine of Fascism. Rome : Ardita.

PARRINDER, E.G. 1968. African Traditional Religion. London : SPCK.

RUCH, E.A. & ANYANWU, K.C. 1984. African Philosophy; An Introduction to the Main Philosophical Trends in Contemporary Africa. Rome : Catholic Book Agency. (Referred to as "Ruch"; the essays by Anyanwu in this volume have been listed separately above.)

SMITH, A. 1976. The Theory of Moral Sentiments. (*In* The Glasgow Edition of the Works and Correspondence of Adam Smith. Oxford : Clarendon. Vol. I.)

SMITH, A. 1950. An Enquiry into the Nature and Causes of the Wealth of the Nations, *ed.* E Cannan. London : Methuen.

SMITH, A. 1980. Essays on Philosophical Subjects, *ed.* Wightman & Bryce. Oxford : Clarendon.

SMUTS J.C. 1929. The Nature of Life. Cape Town : Juta.

SMUTS, J.C. 1932. Some Recent Scientific Advances and their Bearing on Philosophy. (*In* Smuts, J.C. Our Changing World-View. Johannesburg : University of the Witwatersrand Press. p. 1-15.)

SUMNER, W. G. 1934. Essays of W.G. Sumner II, *Ed.* Keller and Davie. New Haven : Yale Univ Press.

TEMPELS, P. 1953. Bantu Philosophy. Paris : Presence Africaines.

TOFFLER, A. 1978. Future Shock. London/Sydney : Pan Books.

VAN DER WALT, B.J. 1978. A Comparison between Bantu and Western Thought. (*In* Van der Walt, B.J. 1978. Horizon; Surveying a Route for Contemporary Christian Thought. Potchefstroom : IRS. p. 19-49.) (Series F3, no. 10.)

VAN DER WALT, B.J. 1990. Being Human; A Gift and a Duty; On the Way to a Christian View of Man for Africa. Potchefstroom : IRS. (Series F1, no. 49.)

VENTER J.J. 1990. 'n Filosofiese Perspektief op die New Age Beweging. (*In* Van Der Walt, B.J. *et al.* Die "New Age"-Beweging. Potchefstroom : IRS. p. 51-79.)