HOLISM AND EVOLUTION

(Jan Christian Smuts and his permanent mission.

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Evolution at London, 1926)

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Introduction

Jan Christiaan Smuts (24 May 1870 – 11 September 1950) who was from 1919 – 1924 and again from 1939 – 1948 the Prime Minister of the Union of South Africa (nowadays the Republic of South Africa). He was brought up in the Afrikaner Calvinistic tradion which has proved a powerful set of norms emphasizing hard labour, moral rectitude, individualism, and separation from the non-Whites (Kinloch, 1972:92). He was an outstanding student and philosopher, a jurist, a soldier in war, a politician in South Africa, a statesman for the Commonwealth, a founder member of the League of Nations and the United Nations. He was an eager supporter of the idea of international government (internationalism) and supported the League of Nations' proposals in 1919. He gave support to the United Nations proposals by assisting in drafting the Charter and being the author of the Preamble. Smuts was an outspoken opponent of totalitarianism (i.e. communism) where centralized authority exercized by the state is stressed over the autonomy of individuals or groups in a society (The New Universal Library, 1968:392).

During his lifetime Smuts was influenced by *inter alia* scientists like Einstein. Einstein pondered on a man enclosed in a cage so that he cannot observe any other body and cannot notice his own motion, and saw in that the vision of a new law, the law of relativity which dethroned Newton's law of gravitation (Beukes, 1989:111). Smuts was also influenced by philosophers, General Louis Botha, the *Society of Friends* (the English Quakers), poets and Darwin's system of thought in his *The Origin of the Species*. Poetry brought out the fundamentals of reality and it was as a student of poetry that he first saw the light. For Smuts there was something greater in poets than in their works; there was something greater behind their works and in their personalities than in their works. It was studying their personalities that he had come on the concept of the *whole*; the personality, *sui generis*, underlying their lives and their work; a whole that had its own laws of development (Beukes, 1989:63).

Of all the people Smuts had met in his lifetime, General Louis Botha, the first Prime Minister of the Union of South Africa, made the deepest impression on him. After the ending of the Anglo-Boer War on 31 May 1902, Botha's mission and vision was to conciliate Boer (Afrikaners) and Briton and thus to bring peace and unity between them in South Africa. Smuts, like Botha, in his inner transformation lost his Afrikaner outlook to gain a new South Africanism, lost his self as a Boer warrior to find his duty in service to his country and to all mankind, lost his enslavement to hatred of the British to find true freedom as a personality. In bridging the gulf between self and sacrifice, between egotism and duty, between nationalism and humanity, he entered the larger and more rewarding world of the spirit (Beukes, 1989:87-88).

The *Society of Friends* (the English Quakers), also enriched Smuts' thought. They have no rigid creed, no established preachers and little formal religion. They believe that Jesus the Spirit of God speaks in the human heart. They believe that Jesus did not die, but speaks in the spirit through human beings and is alive now and everywhere. Smuts learnt through them to get away from formal religion and he made the idea of the indwelling spirit of God in human beings his own. He learnt mostly to worship in the freedom of nature (Beukes, 1989:74,80-81). The secret to Smuts' personality came through his religion and his development from an Afrikaner, a complete whole who coalesced into the larger whole to be a South African who coalesced into the larger whole of that of a universal man. As a universal man he resembles Shakespeare, Goethe, Leonardo da Vinci and Albert Schweitzer. Two trends shaped Smuts' actions and ideas: the one born of trust and based upon it, the other unifying and holistic with unity and freedom as its core (Beukes, 1989:89,144).

Smuts' book *Holism and Evolution* (1926) dealt with the unity and continuity in nature. He derived the concept *holism* from the Greek *holos*, which means *whole*, *all*, *entire*, *total*. His *holism* is a synthesis between Darwin's theory of evolution which was developed in his *The origin of species*, Einstein's theory of relativity and Smuts' own reflections on the evolution of matter, life and mind (Visser, 1995:2). Smuts' idea of *holism* was a response to the reductionistic view of reality in the 1920's, which failed to recognize: (1) the countless synergies which exist in the natural and human life worlds, and (2) the process of creative evolution (Visser, 1995:1). *Reductionism* refers to the viewpoint: (1) that all explanations of the actions of systems could be mathematically calculated from those of the component parts of the universe; (2) that

all explanations of social behaviour are psychologically reducible (Theodorson & Theodorson, 1970:338; Visser, 1995:1).

Smuts' philosophy of life as developed in his *Holism and Evolution* has also practical applications. He laboured to make the former four provinces of South Africa (Cape Province, Free State, Transvaal, Natal), which each in themselves were complete wholes, coalesced into the larger and better whole of the Union of South Africa. The Union of South Africa coalesced into the larger and better whole of the British Commonwealth of Nations, which in time coalesced with other nations (wholes) into the larger and better whole of the League of Nations after the First World War and eventually into the larger and better whole of the United Nations after the Second World War (http://www.algebra.com/algebra/about/history/Jan-Smuts.wikipedia:7-8; Amstrong http://www.ourcivilisation.com:3).

In a letter Smuts wrote on 9 November 1945 to one of his life-long friends, Mrs. Gillett, he indicated that he longed for "... time to write my second volume and let the first (Holism and Evolution) become antiquarian as it is practically antiquated" (Quoted by Beukes, 1989:201).

Smuts' methodology

Any scientific investigation starts with the asking of questions, and in the context of Smuts' holism and evolution, the following questions could be asked (Beukes, 1989:118):

- How can the higher arise from the lower in the scale of evolution?
- How can the more come from the existing?
- How can something grow out of nothing?
- How can a higher form arise from the lower?
- What of the law of cause and effect?
- How can the effect be more and higher than the cause?

Holism seems to provide the key to a logical explanation of the said questions.

Smuts assumptions, *viz*. ontological (which concern the very essence of the phenomena under investigation), epistemological (about the grounds of knowledge) and anthropological (concerning human nature) have direct methodological implications. He followed an *ideographic approach* due to the fact that his principal concern was with an understanding of the way in which the individual creates, modifies and interprets the world in which he/she finds themselves (Burrell & Morgan, 1979:1-3).

Smuts' perspective on holism

Smuts' epistemological assumptions about the grounds of knowledge - about how one might begin to understand the world and communicate this as knowledge to fellow human beings - can be found in his book on *Holism and Evolution*. With his concept holism Smuts claimed to have identified the "ultimate synthetic, ordering, organizing, regulative activity in the universe, which accounts for all the structural groupings and syntheses in it" (Smuts quoted by Visser, 1995:2).

Smuts' *holism* is a theoretical humanistic perspective, his philosophy of life, in which God as the creator and upkeeper of His entire creation is denied. Regarding *holism* he assumes the following:

- That it is ... "an idea ... an attempt at synthesis, an attempt at bringing together many currents of thought and development such as we have seen in our day. It is not a system of philosophy. I do not believe very much in systems. They are sometimes helpful, but it is most difficult, in matters so complex as life and thought, to take one concept that might embrace adequately the whole. Holism the theory of the whole tries to emphasize one aspect of thought that has been hitherto a neglected factor. I am trying to hammer out this neglected factor, which is, to my mind, all-important in getting the synoptic vision" (Smuts quoted by Beukes, 1989:195).
- That it is the unifying power which makes everything whole (Beukes, 1989:114-115).
- That it implies that there is a definite pattern, an inner core which produces ever higher forms in all evolution (Beukes, 1989:116).
- That it is the natural built in driving force and organizing principle of all entities and phenomena, wholes, towards wholeness (Beukes, 1989:119).
- That the *whole* is an entity, the focus of observation, and could be physical (i.e. a rock), generic (as in "rock" generally), a phenomenical description of behaviours (i.e. war, compassion) and metaphysical (i.e. mathematics, physics, spirituality) (Van Wyk, no date:5).
- That the *whole* is greater than the sum of its parts. In other words, the parts of any whole cannot exist and cannot be understood except in relation to the whole. In this context, a whole is the equivalent of a *system*. All the properties of a given system, i.e. an action system (biological, personality, social, cultural) cannot be determined or explained by the sum of its component parts alone. Instead, the system as a whole determines in an important way how the parts behave (Wikipedia, 2006. http://en.wikipedia.org/wiki/holism:1).
- That it is ... the making of wholes which makes this universe creative, and the creative universe is therefore necessarily the holistic universe" (Smuts quoted by Beukes, 1989:119).
- That *wholes* are the real units of nature and as a unity wholes are selforganizing systems and synergistic, thus cooperating units. For him every organism, every plant or animal, and every person is a whole that has a certain internal organization and measure of self direction as well as an individual specific character of its own (Beukes, 1989:119).
- That the existence of *wholes* is a fundamental feature of the world. It regards animated as well as inanimated natural objects as *wholes* and not merely as assemblages of elements or parts (Benking (a), 1997:2).
- That *nature* is being regarded as consisting of discrete, concrete bodies and things. These discrete, concrete bodies and things are not entirely resolvable into parts. They are wholes which are more than the sum of their parts through creative evolution (Beukes, 1989:206).
- That it is a real factor, impressing itself in an inner arranging, organizing way on all parts, and thus with the parts and in its relation to them, it constitutes a whole. (Beukes, 1989:195, 196).

- That wholeness is the fundamental character of every personality as of every form and structure in the universe. We live in a world and in a universe where everything, as every life and person, always forms a whole. It is a universe of whole-making, nothing is half-finished, and if it is, it is abnormal and contrary to the purpose of nature as well of all existence (Beukes, 1989:114). It includes both the physical reality and the conceptual understanding and appreciation of such entity as well as its entire fields of relationships, viz. natural eco-systems with their observed interdependencies, human societal systems with their meaning-making functions, consciousness as a summation of all phenomena of existence (Van Wyk, no date:5).
- That from holism, through the developmental and evolutionary process, emerged the following six stages of wholeness (Van Wyk, no date:6; Beukes, 1989:115):
 - ► Matter that proceed from the lower organizational class of the atom, as the basis of inorganic matter, which, through diverse patterning, manifested in all its diverse inanimate forms.
 - ◆ Life arising from matter and evolving to the higher class of cell, as the basis of organic life, in which qualities of the former inanimate material became animate, manifesting in all diverse forms of biological life in a growing complexity of wholes. This complexity became possible through an increasing quality of synthesis of diverse parts into co-operative structure.
 - Mind arising from the co-operative activity of life becoming increasingly centralized, the beginnings of mind, although still implicit and unconscious, i.e. in the animal which now had greater co-ordination and control.
 - ◆ Personality, arising from this central control of mind, now becomes increasingly conscious the greatest expression of the whole emerging into more composite holistic groups in society.
 - Supra personal systems arising from human associations so that this central control became super-individual in organizations such as the state, whilst nevertheless still a function of collective personality.
 - Absolute values, set free from subjective human experience and the emergence of ideal wholes, which are fields disengaged and set free from human personality operating as creative factors on their own account in generating a spiritual world. In the spiritual world lays the foundations of a new order in the universe. Human personality has thus become a creative factor in the universe, capable of generating such ideals as *truth*, *beauty*, *goodness*, *freedom*, *purity* and *love*.

Smuts' perspective on evolution

As a philosopher, Smuts believed in creative evolution. Creative evolution presupposes that evolution is emergent (Beukes, 1989:206). For him reality is dynamic, energetic, evolutionary, biological and spiritual. He saw a rise of evolution from simple to complex, from unicellular to multifarious, from imperfect to perfect. His expectation was that this grow to perfection will continue and that not only man will develop into a more perfect personality but also that the holistic ideals of *truth*, *beauty*, *goodness*, *freedom*, *purity* and *love* will come closer all the time (Beukes, 1989:51). Smuts was convinced that (Benking (b), 1997:1-2):

• Evolution was on the way to more perfect wholes.

- Paradise will be reached in the future and does not lie behind us.
- The cosmos is a living inspired organism.
- Everything contributes to the harmonic ordering of the whole.
- Man has become the most important factor of evolution and directs it.

Smuts said of the concluding remarks of Darwin that "I am free to confess that there are few passages in the great literature of the world which affect me more deeply than these concluding words of Darwin's great book. They have a force and a beauty out off all proportion to the simple unadorned phrasing. They are the expression of a great selfless soul, who sought truth utterly and fearlessly, and was in the end vouchsafed a vision of the truth which perhaps has never been surpassed in its fullness and grandeur" (Smuts, 1926:187; Beukes, 1989:62-63).

The whole Darwinian theory is summerized in the last sentences of *The Origin of the* Species: "It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing in the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth with Reproduction: Inheritance which is almost implied by reproduction; Variability from the indirect and direct action of the conditions of life, and from use and misuse; a Ratio of Increase so high as to lead to a struggle for life, and as a consequence to Natural Selection, entailing Divergence of Character and the extinction of less-improved forms. Thus from the war of Nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is a grandeur in this view of life, with its several powers, having been originally breathed by the Creator into few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved" (Smuts, 1926:187; Beukes, 1989:62).

Evolution (growth and development) is only part explanation of the miracle and mystery of life as of all existence. The controlling, regulating, pattern-building force which lifts each successive growth in the process of evolution to a higher form, is holism (Beukes, 1989:119). Evolution is for Smuts implicit in his concept of holism: "There is a creative activity, progress and development of wholes, and the successive phases of this creative Evolution are marked by the development of ever more complex and significant wholes ... At the start the fact of the structure is all-important in wholes, but as we ascend the scale of wholes, we see structure becoming secondary to function, we see function becoming the dominant feature of the whole, we see it as a correlation of all the activities of the structure and affecting new syntheses which are more and more of a creative character" (Smuts quoted by Visser, 1995:2). Smuts also indicates that "Under the double influence of the internal genetic and external environmental factors life has subtly adapted itself to the ever-changing situations on this planet ... In the process of this evolution not only new structures and organs, but also new functions and powers have successively appeared, culminating in the master key of the mind and in the growning achievement of human personality" (Smuts quoted by Van Wyk, no date:7).

According to Smuts (1926:183; Beukes, 1989:116) "It is the organism that advances on a certain more or less limited front ... the variation issues from it and is in conformity with its whole trend and movement" The variation is not single and unsupported, but behind it is the whole force of the organism. The organism as a whole selects the winning variation or series and confers on it support and survival value. In evolution, for Smuts, not only creative forces responsible for the variations, but also repressive forces which hold in check certain tendencies and features while releasing and pushing forward others. Thus the balanced whole of the type or species is achieved. The repressive tendency as part of evolution operates on the organic level, but becomes much more conspiuous on the psychological level where it operates as ethical restraint, so essential to beauty and the formation of the Personality as a moral whole (Beukes, 1989:116-117).

With Darwin Smuts showed that matter, life and mind do not consist of fixed, constant and unalterable elements. He recognized the idea of continuous growth and development, of continuous creation where life and the universe are never static. But Smuts went further. He combined this with a new active factor, the whole, which science and philosophy up to that time had not recognized. He showed that the whole has an influence and an effect on the evolutionary process all of its own (Beukes, 1989:117). Smuts saw two main forces operating in all existence, and between the interaction of these two, the patterns of life are shaped to ever higher forms, *viz*. (Beukes, 1989:118):

- Evolution: growing and developing forces.
- Holism: binding, forming and formative forces.

Smuts' perspective on personality

Smuts' anthropological assumptions about human nature, is elaborated in his idea of personality. His vision of a natural process, the *human personality*, became the foundation stone on which he built his idea of *holism* as a new master key to knowledge. Smuts was only 19 and a student at Stellenbosch when he was first struck by the strange and wonderful phenomenon, the human person and his almost divine personality (Beukes, 1989:111).

For Smuts, the ideal human personality is:

- Capable of growth and upward movement, not only in individual cases, but also in the larger cosmological time-scale of science (Beukes, 1989:185).
- Capable to develop to the divine level (Beukes, 1989:185).
- The summit of perfection (<u>www.ourcivilisation.com:3</u>).
- To "Learn to be yourself with perfect honesty, integrity and sincerety; let universal Holism realise its highest in you as a free whole of Personality; and all the rest will be added unto you peace, joy, blessedness, happiness, goodness and all the other prizes of life. Nay more: the great evils of life pain, suffering and sorrow will only in the end serve to accelerate the holistic progress of the Personality, will be assimilated and transformed in the spiritual alchemy of the Personality and will feed the flame of the pure and free soul" (Smuts, 1926:314-316; Beukes, 1989:88).

- One that would not have in him/her anything which is not at peace with themselves or which is alien or external to themselves (Beukes, 1989:207).
- A free person creating its own values. "The whole ... even in its most humble organic forms, lays the foundation of the new world of freedom" (Smuts, 1926:138; Beukes, 1989:122). Freedom was always the highest ideal for Smuts for nations as well as for individuals (Beukes, 1989:144)...
- One whose live reveal not only an inwardness but have real inner histories, lives of the spirit, as well as a fair capacity for continuous development during his/her lifetime, such as Goethe, Schiller, Shakespeare, Whitman. Such a type will lead to a holistic study of a personality against the old biography which concentrated on the mere externals of dates and facts (Beukes, 1989:27).

Holism and evolution in present-day society

In the 1970s the holistic approach was considered one possible way to conceptualize psychosomatic phenomena. Instead of charting one-way causal links from psyche to soma, or vice-versa, it aimed at a systemic model, where multiple biological, psychological and social factors were seen as interlinked. At present it is commonplace in psychosomatic medicine to state that psyche and soma cannot really be separated. A disturbance on any level, viz. somatic, psychic or social, will radiate to all the other levels, too. In alternative medicine, a holistic approach to healing recognizes that the emotional, mental, spiritual and physical elements of each person comprise a system, and attempts to treat the whole person, concentrating on the cause illness well as symptoms (Wikipedia, 2006. Holism. the http://en.wikipedia.org/wiki/holism:2).

Of importance is that Smuts was of the opinion that "... the conception of wholes applies in a sense to human associations like the State, and to the creations of the human spirit in all its greatest and most significant activities" (Smuts quoted by Visser, 1995:3). From this point of view, holism fits into the holistic structural functionalistic and open-systems perspective. A system, which is an organization of interrelated and interdependent parts that form a unity, posesses microscopic (processes which play in a system) as well as macroscopic features (the behaviour of the system viewed as a whole) (Jantsch, 1980:207; Theodorson & Theodorson, 1970:431). In approximately the middle of the 20th century systems thinking, as a holistic approach, became prominent. From the point of view of a holistic structural-functionalistic perspective, represented by Talcott Parsons in his *The social system* (1951), it is assumed that (Kinloch, 1977:193-194; Theodorson & Theodorson, 1970:133):

- Society as a whole, which has emergent qualities, possesses an independent reality beyond the existence of the individual as a system of interaction.
- Society has characteristics in common with other living systems.
- The structure of a society consists of distinct subsystems, *inter alia* the behavioural organism, the personality system, the social system, the cultural system.
- Structure represents underlying system needs (functions) or system problems which have to be resolved, *inter alia* adaptation, goal attainment, integration, pattern maintenance.

• The subsystems is in equilibrium and have a tendency to be and to remain a functionally integrated phenomenon. Any change in one part of a system will bring about adaptive changes in other parts.

From the holistic open-systems perspective of Walter Buckley's *Sociology and modern systems theory* (1967) it is assumed that (Kinloch, 1977:199-200):

- Social organization in the adaptive *psychological system* (the biological individual, environmental objects of interest to him/her; another individual, communication and information exchanges) and the adaptive *sociocultural system* (variety, maintenance of an optimum level of system tension and member satisfaction, a two-way communication network with the environment for goal-attainment, a decision-making system, internal socialization system) is based upon the process of information feedback.
- Social organization in the adaptive *psychological system* and the adaptive *sociocultural system* is structured by the communications system and the processes of *morphostasis* (form-preserving processes) and *morphogenesis* (processes which tend toward elaboration and/or system change).

From his viewpoints, one can deduce that Smuts' ontological assumptions about the nature of the social world is one of order and consensus, stability and integration in which equilibrium reign supreme (Dahrendorf, 1959:160-162). However, the relative stability in South Africa that was the order of the day during his lifetime was due to economic integration and effective police control (Kinloch, 1972:109). Although Smuts fought in the Anglo-Boer War (1899-1902), the First as well in the Second World Wars, and in this context, his idea of holism was distorted in that he believed that " ... the world itself, which is more than its parts or individuals, which has a soul, a spirit, a pull, a fundamental relation to each of us deeper than all other relations, is a friendly world ... " (Smuts quoted by Beukes, 1989:52,53). He believed that we live in a friendly world where co-operation rather than strife forms the core of our beings (Beukes, 1989:210). Contrary to Smuts' viewpoint and that of systems theorsits, a system is never stable, in perfect equilibrium, always friendly or completely predictive. The South African as well as the world's reality, as shown throughout the history of humankind, is also one of change, conflict, disequilibrium and disintegration. Not only co-operation but also competition, conflict and coercion exist as forms of interaction in and between societies. However, as Kinloch (1972:175) rightly indicates, " ... it is obvious that both consensus and conflict approaches are inadequate to handle a society as complex as South Africa ... this society consists of inter-related parts at the same time as there are elements which tend to co-exist without being significantly complementary, interdependent, or in opposition. Also, both evolution and equilibrium are involved in the system's social change process."

Notwithstanding his idea of *holism*, his belief in the divine and free personality, Smuts was during his two terms of office as the Prime Minister of the Union of South Africa, unable to solve the racial problem in the plural South African society. General Louis Botha who Smuts so admired, never once considered the Blacks as part of the South African nation. He influenced also Smuts to disregard the Blacks as part of the social and political order. Notwithstanding his contact with the *Society of Friends* (the English Quakers), they did not and could not overcome his inborn neglect – racial

prejudice – against the Blacks of Africa (Beukes, 1989:64,65,80). However, he was influenced not only by his environment in South Africa where the master/servant relationship existed, but also by the 19th century outlook of the Black man as the White man's burden (Beukes, 1989:190). Smuts hold a belief that "When I consider the political future of natives in South Africa I must say that I look into shadows and darkness, and then I feel inclined to shift the intolerable burden of solving that sphinx problem to the ampler shoulders and stronger brains of the future. Sufficient unto the day etc. My feeling is that strong forces are at work which will transform the Afrikaner attitudes to the natvies" (Smuts quoted by Beukes, 1989:191).

Conclusion

Intellectually Smuts was brilliant, self-assured with a colossal self-confidence. He possessed a quality of imagination (vision) to look beyond the material existing order of things. He saw life not in the narrow rational and limited way of the materialists of the 19th century, but as the great flow of ever grander and nobler strirrings to a higher pattern (Beukes, 1989:37-40). From his ideas elaborated in his *Holism and Evolution*, one can deduce that Smuts certainly possessed a *sociological imagination* – a quality of mind to shift from one perspective to another, and in the process he build up an adequate view of a total society and its several components (Mills, 1968:211). He understood the larger historical scene in terms of its meaning for the inner life and the external career of a variety of individuals and could grasp history and biography and the relations between the two within society (Mills, 1968:5-6, 143). However, as Beukes (1989:40, 64) indicated, it is doubtful whether Smuts possessed the quality of feeling, of sympathy, of compassion – a quality which is allied to our deepest humanity. "If he had it, and if on rare occasions he showed it he did not have it as the conspicuous quality which Abraham Lincoln (and Louis Botha) displayed".

His outstanding contribution with his concept of *holism* was during a time where knowledge had become separated into watertight compartments in a large overspecialization by the experts (Beukes, 1989:79). Smuts idea of *holism* and creative evolution stands as a landmark of his creative thinking. However, ideas are not that important in society. Although every society contains ideas, they are only part of the sum of what passes for *knowledge*. Only a very limited group of people in any society engages in theorizing, but everybody lives in a world of some sort (Berger & Luckmann, 1976:26-27). The same applies to paradigms. Paradigms (i.e. metaphysical, theological, philosophical, positivistic), which are conceptual models that are used for interpreting phenomena, change as the structure of a society being modified. Man's changing definition of reality, particularly its movement from the physical to the social, is primarily a function of ongoing societal development, emphasizing that theory and explanation represent people's reactions to particular societal conditions (Kinloch, 1977:57).

As a philosopher, Smuts believed in creative evolution. Creative evolution presupposes that evolution is emergent. Darwin's theory of evolution, as applied to man, assumes that man evolved gradually from animal ancestors through a process of genetic mutation and natural selection resulting from the survival of the fittest (Thedorson & Theodorson, 1970:102). Accordingly, the entire organic panorama of change could be interpreted in terms of natural selection, "an innate tendency towards progressive development" (Nisbet, 1970:179), that is, nature is composed not of fixed

but of evolving forms (Rossides, 1978:169). Accordingly, all species, including human beings, are constantly changing as they are interacting and eventually adapting to changes in their environment (Abercrombie et al, 1986:84; Mann, 1983:81, 118; Theodorson & Theodorson, 1970:387). "Darwin's discovery of the lawfulness of random mutations in biological evolution was a dramatic confirmation that one of the most complex portions of the empirical realm was rational. Of special significance for the logic of science ... was the fact that this rationality was statistical in nature" (Rossides, 1978:260). For Smuts, like Kant, from the facts of nature no inference of God is justified (Beukes, 1989:206).

However, Smuts never even considered in his elaboration of his idea of holism what the influence was of the sinfall in Paradise on nature, humankind, on personalities and societies. According to Smuts son, Jannie, "his father thought of Jesus Christ as a very remarkable gifted young man, rather than as the Immaculate Son of God" (Smuts quoted by Beukes, 1989:208).

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