# 12. Father of holism

# The intellectual legacy of Jan Smuts

*Kobus Du Pisani*
*North-West University*

Jan Smuts (1870-1950), the famous South African statesman, politician and military commander, also made intellectual contributions to society. There is disagreement as to whether these contributions were of such a nature that Smuts can be classified as an intellectual. His admirers have no doubt that he was an intellectual (Geyser, 2019:65). In contrast, his political opponents referred to him as *Slim Jannie* (Clever Johnny) (Armstrong, 1937:75), not to praise his intelligence, but to suggest that he was a cunning politician who could not be trusted. In scientific circles, Smuts's contributions were praised on the one hand, but criticised on the other. In the light of these opposing opinions, in this chapter I try to answer the question of whether Smuts can be classified as an intellectual and on which basis he deserves this status.

## Smuts's intellect and interest in the sciences

That Smuts had a 'highly developed intellect' (Geyser, 2019:65) is confirmed by his record as a scholar and student. He went to school at the age of twelve but completed his schooling in a short time with great success. At the Victoria College in Stellenbosch, Smuts was a top student and, based on his academic performance, he obtained the Ebden scholarship, which enabled him to study law at Christ's College in Cambridge. There he excelled as a brilliant student and won the prestigious George Long Prize for his unparalleled academic achievements. He was later singled out by Lord Todd along with John Milton and Charles Darwin as one of the three

outstanding students in the 500 years of Christ's College's history (Geyser, 2019:43, 47, 49-50).

Even Albert Einstein, the outstanding scientist of the early twentieth century, had praise for Smuts's intellect and considered him one of the few people who understood his theory of relativity. Smuts himself claimed to have 'thoroughly mastered' the theory. Einstein, impressed by Smuts's *Holism and Evolution*, forecast that the theories of relativity and holism would guide human thinking in the next millennium (Brush, 1984:291; Van Wyk, 2013; Geyser, 2019:43).

Smuts could have pursued an academic or legal career in England but decided not to continue with postgraduate studies in Cambridge and returned to South Africa. His political and military activities in the rest of his career prevented him from returning to academic studies. He did not acquire further formal qualifications but remained an 'eternal student' through his reading and interaction with scholars. He kept abreast of scientific advances and actively participated in the academic discourses of his time (Geyser, 2019:61-3).

Smuts was a scientist in his own right. His contact with botanists and his fieldwork and reading contributed to his becoming a leading expert on grasses, who enjoyed scientific recognition as a botanist. He identified new types of grass that were named after him, of which the *Smutsvingergras* (*Digitaria smutsii* Stent) is the most famous (Pieterse, 2019:114-26).

As a decision-maker in the government of the Transvaal Colony and later the Union of South Africa, Smuts was a promoter and patron of the sciences. Through his efforts, the Transvaal University College, forerunner of the University of Pretoria, came into being (Strydom, 2019:127-37). He was a member of various South African scientific associations, contributed to the scientific literature in speeches and forewords for publications and provided input to promote several academic disciplines at South African universities (Plug, 2016).

Smuts was therefore exceptionally intelligent, excelled academically, had a scientific mindset, participated in

scientific discourses and made significant contributions to the advancement of the sciences. To determine whether these characteristics made him an intellectual, it is necessary to first define the term 'intellectual' and determine which criteria an intellectual must meet.

## What is an intellectual?

There is an age-old tradition of educated, intelligent persons who possess insight, wisdom and vision and participate in public discourses on societal issues. However, the term 'intellectual' only came into use at the end of the nineteenth century when Émile Zola and others in France criticised the state's handling of the Dreyfus affair and Georges Clemenceau used it as a noun for the first time (Brouwer & Squires 2006:34). In the course of the twentieth century, the term 'intellectual' acquired a predominantly positive meaning by associating it with persons who make positive contributions in the public sphere and act as the benefactors of humanity and mouthpieces for truth and justice (Hall, 1996:8; Baran, 1961; Ory & Sirinelli, 2002:10).

Intelligence, critical thinking and the ability to argue are characteristics of an intellectual but are not the only requirements which an intellectual must meet. Ongoing debates have been and continue to be held in philosophical and other scientific circles about the definition of an intellectual and the criteria that someone must meet to qualify as an intellectual.

There is a fair amount of consensus about certain characteristics of an intellectual. Public engagement in issues of general interest is a key characteristic of intellectuals. They help shape public opinion. Furthermore, an intellectual must possess profound knowledge, insight into the larger connections between the various aspects of human existence and future-oriented vision. Leading intellectuals are often generalists rather than specialists and can speak out on a variety of subjects. They must be critical, denounce injustice in society and provide practical solutions to societal issues

(Etzioni, 2006:1-2; Bullock & Trombley, 2000:433). Sartre (1946) typified intellectuals as the moral conscience of their time (see also Cohen-Solal, 1989:588-9; Scriven, 1993:119). Said's (1993) call for intellectuals to fearlessly speak the truth to those in power is well known. According to him, in the postcolonial situation, intellectuals should side with the dispossessed, the unrepresented and the forgotten. From the literature it is clear that the intellectual is more than just a particularly intelligent or well-read person ('man of letters') and also more than just a thinker. They are expected to challenge notions that are taken for granted (Fuller, 2013:12) and to provide the kind of intellectual leadership through which social change can be achieved (Jennings & Kemp-Welch, 1997:210).

Despite the consensus on certain essential characteristics of intellectuals, the discourse on the characteristics and functions of intellectuals reveals numerous differences of opinion. There is no consensus on what role academics as intellectuals should play in society (Jacoby, 1987). Furthermore, there are divergent views on how neutral an intellectual should be towards ideologies (Lenin, 1902; Ramos, 1982; Bauman, 1987:2; Furedi, 2004:32; Etzioni, 2006:3). Foucault (1980:126-33) and Lyotard (1993:3) argued that the traditional conception of the intellectual, as someone who makes statements about universal truths, has become obsolete in the postmodern era. There is also disagreement about whether the intellectual should be inside, outside or on the fringes of the establishment (Ramos, 1982; Bourdieu, 1991:656; Jennings & Kemp-Welch, 1997:1-2). In fact, there is no consensus on what exactly an intellectual is. There is so much variation in views about the intellectual that it is almost impossible to encompass all viewpoints in a single definition (Howe, 2006:71,72). Hall (1996:34) believes that the question 'What is an intellectual?' cannot be answered and is therefore meaningless.

In light of this elusiveness of the conception of the intellectual and in light of the fact that ideas about the intellectual are constantly being adapted to changing

circumstances, it is hardly possible to lay down a specific set of criteria to test the claim that Smuts was an intellectual. Nevertheless, in the following sections, an attempt will be made to measure up Smuts's contributions to certain of the identified characteristics of the intellectual, referred to above, by trying to answer the following two questions: Did Smuts make an original contribution to the public discourse of his time? Was his contribution well noted and did it make a significant impact on society in his own time and later?

## Holism as Smuts's primary contribution to the public discourse

The claim that Jan Smuts can be classified as an intellectual revolves mainly around the concept of holism and its societal impact. The possibility that Smuts's written and oral contributions to the founding of the Union of South Africa, the British Commonwealth of Nations, the League of Nations and the United Nations may be interpreted as an intellectual input into twentieth century statecraft is a separate topic and is not pursued in this chapter.

Smuts is recognised as the father of the term 'holism', because it first appeared in print in 1926 in his book *Holism and Evolution* (Ansbacher, 1994:486-92; Du Plessis, 2016). When he was a student at Stellenbosch and Cambridge, decades before the publication of his book, Smuts's thinking on holism had already begun to take shape and over time found expression in written form in various texts, including *Walt Whitman: A Study in the Evolution of Personality* and *An Inquiry Into the Whole* (Du Toit, 2019:66; Geyser, 2019:51, 54-6, 58-9). However, it was not until the end of his first term as Prime Minister, after his South African Party lost the election in 1924 and he became Leader of the Opposition, that he found time to complete his book on holism in his study at *Doornkloof* in a few months. The author of the highly acclaimed biography of Smuts, Keith Hancock (1968:176), reports how Smuts completed the book of 140,000 words in a period of 29 weeks in 1924 and 1925. Three editions of *Holism and Evolution* were

published by Macmillan between 1926 and 1936. In 1961 Viking Press republished it. Over the years many reprints were issued. The text is still readily available in print and electronic format.

Smuts was of course not the first and only thinker to think about the idea of wholes. The roots of holistic thinking extend into the distant past in both Eastern and Western thought. Contemporaries of Smuts, including the physicists Einstein, Heisenberg and Schrödinger, also thought holistically. The well-read Smuts was up-to-date with the latest developments in the scientific thinking of his time, although he never claimed to be a professional scientist or philosopher. In developing his thinking about holism, he relied on a wide range of biological and physical scientists and philosophers, whose ideas he supplemented with his own careful personal observation. He read the works of Kant, Freud and Einstein and incorporated the ideas of scholars such as Spinoza, Hegel, Leibniz and Darwin into his own concept of holism in order to make a synthesis of the existing knowledge of his time (Brush, 1984:291-2; Dubow, 2008:57; Wahl, 2016; Du Toit, 2019:67-8; Heyns, 2019:81-4). Smuts was developing his holistic thinking in an era when a paradigm shift in scientific thinking from Newton's mechanistic world view to Einstein's theory of relativity took place and the realisation took hold that everything in the universe was more fluid and relative than previously believed. New knowledge about atoms and subatomic particles changed the concept of matter. The new view of the universe as a dynamic whole of parts, in which great cosmic processes unfold as incremental successive progressive steps in space and time, supplemented Smuts's holistic ideas.

Much has been written about the content of *Holism and Evolution* (see, amongst others, Hancock, 1968:178-88; Du Toit, 2019:69-76; Heyns, 2019:84-90). Here, the content of the book is not analysed in detail. The core of the matter is that in his book, Smuts attempted to explain the relationship between matter, life and spirit and that it was his conviction that holism was the co-ordinating principle and decisive force that unites these three things into a whole. In his view every

aspect of the entire universe was based on an innate tendency of parts to form stable wholes (Gatherer, 2010:3). For him, holism was the 'something more' that holds together all the elements of complex organisms (Du Plessis, 2016). Smuts (1926:329) explained that holism was the creative factor behind the progressive evolution from matter to life to spirit and ultimately the human personality. Smuts used holism in a metaphysical context, as an ontological phenomenon inherent in nature. Heyns (2019:94) points out that Smuts's holism constituted neither a scientific system nor a philosophical system, but in the area between science and philosophy reflected Smuts's way of thinking about reality, the basis of his worldview. Smuts himself referred to his book on holism as his 'creed' (Hancock, 1968:197). Du Toit (2019:66, 75-6) believes that Smuts did not succeed in solving the mystery of the universe by elucidating the union of matter and life and of body and spirit, but that his book is nevertheless a remarkable contribution. It demonstrated his intellectual power to grasp the essence of areas outside his own specialised fields of botany and politics, and his skills of observation and synthesis (Jörgenfelt & Partington, 2019:7). The idea of holism captured people's imagination (Thomson & Geddes, 1931).

Hancock (1968:176, 188, 189) emphasises that Smuts completed his book in a hurry in the limited time at his disposal. He himself regarded his study of holism as 'preliminary' and expected criticism from scientific circles. *Holism and Evolution* was nevertheless initially particularly well received. Scholars such as Arnold Toynbee, the famous English historian, and Friedrich Meyer-Abich, a German jurist and philosopher, publicly recommended Smuts's work (Geyser, 2019:63-4; Du Plessis, 2022). In his Gifford Lectures on the sciences and philosophy at the University of Glasgow, the famous British physician and physiologist J.S. Haldane assessed Smuts's book as a remarkable text of wide scientific and human understanding (cited in Brush, 1984:289). In scientific circles, the reaction to Smuts's book was predominantly positive and for a number of years holism was one of the big ideas that scientists wrote about (Curtis, 2011).

It was particularly those scientists who opposed the advance of reductionism who adopted the label of holism, which is the opposite of reductionism and holds that understanding a system can be done only as a whole and that not all properties of a system can be explained in terms of its constituent parts and their interactions (Gatherer, 2010:4).

Smuts's theory of holism was not applauded by all scientists of the 1920s. Critics identified a number of shortcomings in the book. Hancock (1968:192-6) shows that *Holism and Evolution* provoked criticism in philosophical and theological circles, and states that it was initially received too favourably and later criticised too sharply. According to Gatherer (2010:1, 4) Smuts failed to find disciples amongst practising biologists for whom his holism was a 'stillborn theory'.

That Smuts's ideas about the holistic personality and personology exerted significant influence on Anglo-American psychology cannot be denied. Holism had a long-lasting effect on personality theory (Shelley, 2008:89-109; Du Plessis & Weathers, 2022). Some of Smuts's contemporaries, for example Alfred Adler and Adolf Meyer, acknowledged the impact of holism on their approach to psychology and psychiatry. Adler described *Holism and Evolution* as 'the best preparation for Individual Psychology' (cited in Du Plessis, 2022). Meyer, referred to as 'the Dean of American Psychiatry', wrote to Smuts as a 'fellow-holist', to express his admiration and gratitude (Neill, 1980:460).

Smuts's influence in the development of Gestalt psychology is recognised by Perls, Hefferline and Goodman (1951), Barlow (1981), Gorten (1987) and Wulf (1998). The insight that the whole determines the parts, which contrasted with former assumptions that the whole is merely the total sum of its elements, was of particular relevance for the development of Gestalt psychology. Kurt Koffka, one of the founders of Gestalt psychology and author of the book *Principles of Gestalt Psychology*, expressed his interest in holism in a letter to Smuts. In response Smuts mentioned

that he was following developments in Gestalt psychology (Blanckenberg, 1951:159). Fritz Perls, co-founder of Gestalt therapy, was significantly influenced by Smuts's book and noted that Smuts's ideas complemented the holistic work of Kurt Goldstein, who wrote *The Organism: A Holistic Approach to Biology Derived From Pathological Data in Man.*

The impact of holism on psychology extended beyond Gestalt psychology. Barlow contends that it was adopted by 'all of the humanistic and existential psychologies' (cited in Back, 1973:1). *Ganzheitspsychologie*, developed by the second Leipzig School of Psychology, shifted its focus to holistic complexes and their transformations as the starting point for psychological examinations (Diriwächter, 2021:10-12). Both Carl Gustav Jung, the Swiss founder of analytical psychology, and Roberto Assagioli, an Italian psychiatrist, publicly expressed their admiration for Smuts's book (Geyser, 2019:63-4; Du Plessis, 2022).

Smuts's reputation was boosted by the publication of *Holism and Evolution* and in the following years he received invitations to address scientific societies. The title in Hancock's (1968:220) biography of Smuts of the chapter on his successful lecture tours to Britain and the USA is 'Professor Jan Smuts of Oxford', alluding to his prestige in academic circles at the time. In 1929, he introduced the discussion on the nature of life at the meeting of the British Association for the Advancement of Science in Cape Town. Two years later he addressed this organisation again about 'The scientific world picture of today' in front of a large audience in London. He was honoured to be elected president of the association. This was the peak of Smuts's scientific involvement (Hancock, 1968:234; Geyser, 2019:63).

A few years later, the luxury of devoting time to science came to an end for Smuts when his South African Party began negotiating a coalition with Hertzog's National Party in 1933. In 1934 the two parties merged, and Smuts was again included in the cabinet. In light of scientific advances Smuts later admitted that the content of *Holism and Evolution* was 'pre-

scientific' and had become 'practically antiquated'. He wished that he had the time to write an updated version and let the original version become 'antiquarian' (Beukes, 1989:70 cited in Du Plessis & Weathers, 2022:94). However, his political responsibilities in the rest of his life did not allow him to write his intended sequel to *Holism and Evolution*.

Kriek (2019:368-99) indicates how Smuts's holism was more than just a theoretical concept but had practical impact through his actions as a politician and statesman in devising political structures such as the Union of South Africa, the British Commonwealth, the League of Nations and the United Nations. Morefield (2014:172-90) argues that Smuts's holistic thinking underpinned his internationalist ideals and that the long-term influence of these ideals even extends beyond the British Commonwealth, the League of Nations and the United Nations to contemporary forms of informal Imperialism. Du Plessis and Weathers (2022:93) comment on Smuts's perception of the state:

> [T]he Modern State should not be seen as a holistic unity or a holistic organism; they are merely aggregates of wholes (individuals), never more than the sums of its parts. Smuts called these types of organisations 'holoïds', which are mechanical and not organisms.

What is important for this chapter and will be traced in the following sections is what contribution Smuts's views made to public discourses in his own time and later.

## Tansley and Smuts: the discourse of holism in the 1920s and 1930s

Differences of opinion about Smuts's conception of holism in his own time are a sign of wider scientific debates and especially the rivalry between the idealist and materialist approaches to science. Scientific idealism starts from the assumption that reality, as man knows it, is constructed by the human mind and is therefore essentially immaterial and is sceptical about the possibility of knowing anything independent of the human mind. In contrast, scientific

materialism starts from the assumption that matter is the fundamental constituent of nature and that all things, including things of the mind and consciousness, are the result of material interaction. This is related to physicalism, the view that everything that exists is essentially physical (Odendal & Gouws, 2010:436,701).

Idealists assumed that living things are essentially different from non-living things and argued that the origin of life must be attributed to a supernatural creation process. In contrast, materialists argued that living organisms are also material objects, cannot claim a special status, and are subject to the same processes that regulate all physical systems. Different variations of materialism have evolved. According to mechanistic materialists, living organisms function in a similar way to machines, they are subject to the laws of physics and should be investigated with the tools of physics and chemistry. Holistic materialists argue that complex systems are more than the sum of their individual parts. Dialectical materialists argue that complex systems are always changing due to the interplay of opposing forces within themselves and emphasise the dynamic nature of living organisms (Web Solutions, 2017).

Smuts's Christian-oriented religio-philosophical beliefs contributed to his idealistic outlook and his opposition to the materialistic approach, which at that time was becoming dominant in philosophy and science. The idea that life arises from matter because physical matter is animated by a transcendent spiritual element was not acceptable to him (Smuts, 1932:12-3. See also Anker, 2001:137-43). Smuts followed a teleological approach, which prioritised efficiency in creation. He identified holism as a universal principle and argued that evolution is a process that creates ever more complex wholes, and that nature moves in the direction of continuous improvement. The hierarchy of wholes, from lower to higher species, represents a series of progressions to greater perfection (Smuts, 1927:99, 213, 297-313).

When his ideas about holism became world famous with the publication of *Holism and Evolution* in 1926, Smuts was immediately in the middle of a dispute between the idealist and materialist approaches in the ecological sciences. The fame he had already acquired at that stage in the military and political fields contributed to increased public interest in his book. The response resulted in an intense dispute.

Other contemporary scientists shared Smuts's teleological-idealist view. The most prominent of them was Fredric Clements, famous American plant ecologist and pioneer in the study of the succession of vegetation, who considered biotic communities as complex organisms, tending towards harmony and stability. Clements developed an influential theory of botanical change towards a climax state, which aligned with Smuts's holistic views (Foster & Clark, 2008:325-8). Smuts enjoyed strong support amongst ecologists and botanists in South Africa, especially John Phillips (1932:51-70; 1935:488-502; 1954:114-5) and John Williams Bews (1925; 1931:1-15. See Anker, 2001:171-5).

Smuts and his supporters' teleological-idealist conception of ecological holism was fiercely opposed by scientists with a materialist point of view. At the meeting of the British Association for the Advancement of Science in Cape Town in 1929, Smuts's opponent in a debate on the nature of life was Lancelot Hogben. He was a Marxist biologist who worked at the University of Cape Town, advocated mechanistic materialism and was dismissive of Smuts's view of holism (Hogben, 1930:289-316; Smuts et al., 1929; Hancock, 1968:190-2; Anker, 2001:122). Other opponents of Smuts were the British Hyman Levy (mathematician), H.G. Wells (author), Julian Huxley (biologist) and G.P. Wells (zoologist) (Levy, 1933; Wells, Huxley & Wells, 1934).

The most important opponent of the ecological ideas of Clements, Smuts, Phillips and Bews was the socialist Arthur Tansley, first president of the British Ecological Society and creator of the ecosystem concept. He resisted attempts to interpret evolutionary ecology in anti-materialist, teleological

terms. In 1935, Tansley wrote an article for the magazine *Ecology*, in which he challenged Clements, Smuts and Phillips. He criticised their teleological approach that ecological succession is inherently progressive and the notion that holism is the cause and effect of everything in nature (Tansley, 1935). In opposition, he developed his materialist-holistic ecosystem concept, which interprets ecology from the point of view of dialectical, interdependent, dynamic ecosystems and which would gain ground in the 1940s and replace Clements' climax theory as the leading paradigm in ecology (Foster & Clark, 2008:334 -40; Van der Valk, 2014:293; Anker, s.a.).

The sharpest criticism of Tansley and those who agreed with him was not so much directed against Smuts's view of nature, but against his racial views.

Smuts believed that certain races evolved further than others. In his book he attributed the differences between races to natural inequalities (Smuts, 1926:297-313). In 1929 he argued in his Rhodes Lectures at Oxford that the superior European culture in Africa had come into contact with primitive cultures, whose members were childlike, content with a simple way of life, and lacking the European drive for progress and civilisation. Smuts argued that protective segregation was necessary in a country like South Africa to protect the cultures and traditions of Africans from being engulfed by the more developed cultures of the white population and to prevent blood mixing, help maintain racial purity, eliminate racial conflict and ensure a healthy society (Smuts, 1930:30-1, 33, 75-78, 92-93).

Some of Smuts's critics directly related his racial views to his hierarchical, teleological conception of ecology. They argue that he used holism and the outdated recapitulation theory, which underpinned nineteenth century biological racism, as a philosophical-scientific justification for a racial hierarchy, segregation and the treatment of black people in South Africa like children and their exploitation and oppression (Anker, 2001:191; Foster & Clark, 2008:329-31). By doing so, according to certain critics, he undid the valuable insights that were

locked up in the concept of holism (Foster, Clark & York, 2010:335; Rothenberg, 2003:321; Curtis, 2011).

This kind of criticism of Smuts's holism is one-sided. There is disagreement about how Smuts's holistic ideas and his racial views can be related to each other. Garson (2007:154-61,175) disagrees with the arguments of Marks (2001), Anker (2001) and Dubow (2008) that Smuts's holistic ideas were also reflected in his racial conceptions and the political practice of his racial policy. According to him, Smuts in *Holism and Evolution* did not refer to race at all and therefore, rather than interpreting his racial policy as an outgrowth of holism, his racial thinking must be assessed in the context of his public and political life.

The claim that Smuts developed holism as a deliberate scheme for racial oppression is far-fetched because he began to develop his holistic ideas long before he became involved in racial policy as a politician. The debate about the extent to which Smuts can be considered a racist is a separate theme, which is not relevant here. That Smuts's alleged racism renders his concept of holism worthless is obviously a fallacy and fails to discredit holism.

Smuts's involvement in the academic debate between idealist and materialist-oriented scientists continued into the early 1930s. In his presidential speech before the British Association for the Advancement of Science in 1931, for example, he attacked the physicist John Tyndall's materialism (Smuts, 1932:10). Not long after, the scientific interlude in Smuts's career, in which the publication of and response to *Holism and Evolution* was the key moment, was over and his full attention was claimed by his political role in the Hertzog cabinet. In the further debates about the concept of holism, which are analysed in the next section, Smuts would not participate personally. These debates continue to this day, many decades after Smuts's death.

## Smuts's legacy: the continuing discourse on holism

After the Smuts-Tansley dispute, holism enjoyed less prominence for several decades, although Hancock (1968:192) writes that from the mid-1950s it provoked renewed interest amongst philosophers. Since the 1980s, however, holism has come to the fore again and figures at the centre of science discourses. The development of computer technology has made it possible to process data on a previously unprecedented scale. The explosion of knowledge gave birth to new fields of scientific inquiry, such as systems theory and complexity studies, which advocated a holistic approach. Scientists from various disciplines realised that it was not possible to understand complex systems reductionistically by simply analysing their constituent parts in isolation, but that a holistic approach was required (Davies, 1992:78).

Echoes of Smuts's holistic thinking sounded in philosophical terminology. Arthur Koestler, the Hungarian-born British author-philosopher, argued that the 'old hat' of holism had the potential to produce 'lively rabbits'. In an attempt at an integrative philosophy of science he coined the term 'holon' in his book *The ghost in the machine*. It signified in a similar fashion as Smuts's book half a century earlier that every entity is at the same time an entity on its own and a hierarchical part of a larger whole in the great chain of being. Koestler viewed it as a concept that could form the basis for a holistic future scientific worldview. The holon concept and its associated theory is regarded as having the potential to play a crucial role in the movement to combine and synthesise scientific and cultural knowledge about psychological and social realities (Edwards, n.d.). Ken Wilber, a leading contemporary thinker, who was also significantly influenced by Smuts's holism, borrowed Koestler's concept of holons when he developed integral theory. It is a synthetic metatheory aimed at unifying a broad spectrum of theories and models within a singular conceptual framework. Wilber (1980:3) starts the prologue of *The Atman Project: A Transpersonal View of Human Development* with a synopsis of Smuts's concept of holism and then states that modern psychology discovered

that in the human psyche the same hierarchical arrangement of wholes within wholes, reaching from the simplest and most rudimentary to the most complex and inclusive can be found.

J.C. Poynton (1987:188), a zoologist, looked back on Smuts's contribution sixty years after *Holism and Evolution* was first published and concluded that holism was still a respected concept in scientific debates. According to him, Smuts was ahead of his time, and it took decades before the idea of holism came into its own. He wrote:

> Holistic thinking (in a broad sense) is currently aligned with systems theory in opposition to reductionist approaches ... Smuts's process-orientated, hierarchical view of nature, and his non-preformationist, unified interpretation of inorganic and organic evolution, has provided a rallying point for revolts against reductionism.

Jörgenfelt and Partington (2019:2) agree that the increasing popularity of the word 'holism' indicates 'a general striving in a rising number of scientific fields to reduce the influence of reductive research models and replace them with non-linear systems-based structures'.

Holism was one of the roots from which systems science grew. Von Bertalanffy (1971), the creator of general systems theory, argued already at the beginning of the 1970s that nothing in nature can be studied in isolation, but that everything, even human action, is connected to each other as part of a larger system. Systems scientists recognise holism as a basic concept (Umsbach, 2000:1; International Society for the Systems Sciences s.a.). *Holism and Evolution* was revisited at a systems sciences seminar in the 1990s, 70 years after its publication. At that seminar Benking (1997) pointed out that some fields of science still acknowledged the value of Smuts's theory of holism but regretted that others neglected it. He appealed for new studies and discussions about the original theory of holism and said that 'the works of Smuts when looking at them anew today make much sense, especially as Smuts was trying to bring together the physiosphere,

biosphere, and noosphere into one design'. In the *Holistic Science Journal* (s.a.), the creative relationship between whole and parts, as in Smuts's conception almost a century ago, is considered to be the core of holistic science. Whole and parts are not possible without each other. The whole comes about through the parts and the parts represent the whole. There is dynamic interaction between whole and parts.

Over the past decades, holism has been increasingly involved in academic debates in various fields. This includes natural and applied sciences, such as physics, physiology, neurobiology, ecosystem ecology, cybernetics and medical sciences, but also humanities such as anthropology and psychology (Du Plessis, 2016). The work of famous scientists in different fields of research found connection with Smuts's holistic thinking. Amongst the most famous are Paul Davies (physicist, see Davies, 1989), Ilya Prigogine (chemist, see Prigogine & Stengers, 1984), Rupert Sheldrake (biologist), Michael Polanyi (physical chemist, economist, philosopher) and Arthur Zajonc (physicist) (Heyns, 2019:95-8; Wahl, 2016). In the field of the environmental sciences, Smuts's holistic views exerted influence on Arne Naess, the Norwegian founder of deep ecology (Foster & Clark, 2008:341), his follower, Fritjof Capra's (1996:6-8) concept of the 'web of life' and James Lovelock's (1979) Gaia hypothesis. Holism also found expression in the religion-science conversation (Heyns, 2019:105-12). It is the contention of Jörgenfelt and Partington (2019:2,8,17) that Smuts's original theory of holism has not been falsified and that further scientific advances may in future validate his perception of reality. Du Plessis (2022) regrets that Smuts's theory of holism has not received the acknowledgement it deserves for its significant contribution as a key progenitor of contemporary integral metatheory, which attempts to integrate all human wisdom into a comprehensive worldview by combining multiple theoretical perspectives.

Besides the influence of holism on scientific theory, it has also found practical application in, amongst other things, philosophical counselling (Du Plessis, 2022; Du Plessis & Weathers, 2022), holistic medicine, which approaches healing

as an integrated process of body, mind and spirit (Freeman, 2005:154; Lawrence & Weisz, 1998), business practice (Visser, 1995; Olson & Eoyang, 2001) and holistic natural resource management (Van Wyk, 2016a). In *The wholeness principle*, Anna Lemkow (1990) gave an overview of the deployment of holistic thinking in science, religion and society.

Holism remains a key concept in scientific thought. Daniel Christian Wahl (2016), a biologist who focuses on whole system design, traced how holistic thinking as a counter to the reductionist-mechanistic-materialist approach gained traction in holistic science and complexity theory. He views holism as an integrative perspective, which accommodates different perspectives in a flexible and inclusive meta-worldview, which can be used as an overview tool for intellectual integration and an explanatory principle, and which can contribute to sustainable societies.

In 2016, Claudius van Wyk (2016b), an expert in the field of holistic science, re-evaluated Smuts's contribution in *Holism and Evolution*, 90 years after it appeared. He portrays Smuts as an active participant in the transition to a new scientific paradigm early in the twentieth century, who with his opposition to the mechanistic-reductionist model contributed to a transformed holistic view of science that recognised the complexity of reality. For this contribution, Smuts was recognised in scientific circles. Van Wyk draws parallels between Smuts's book in 1926 and new approaches in physics and philosophical thought. He concludes that Smuts's concept of holism should be seen as part of the move towards a postmodern perspective; that it laid the foundation for the emergence of general systems theory, and that it remains a valid epistemological approach as a counter to the materialistic paradigm.

Dalene Heyns (2019:78, 93-8, 111-2) argues in the same vein that Smuts was ahead of his time in his holistic thinking and that this is confirmed by the fact that his theories still resonate in different fields of knowledge to this day. Although Smuts's formulation of holism at the time is no

longer considered adequate today in the light of all the new knowledge that has been produced in the meantime, it remains a valid concept to explain and understand reality. She states:

> One is amazed at the imagination of this extraordinary man who was so far ahead of his time. What was not yet available to him by way of scientific knowledge, he sensed intuitively and as he delved into his imagination he used his visionary insight to predict the path of future development. Amazingly, without the help of a laboratory, computer and co-workers, he had the courage to develop his ideas and put them down in writing so that his theory still takes its place today in the advancement of various schools of thought.

Collected data in the field of chaos theory, a branch of mathematics, confirms that underlying patterns can be identified in the seemingly random nature of complex systems and that Smuts's intuition guided his thinking about wholes in the right direction (Kauffman, 1993, 1995).

## Conclusion

I return to the two questions posed here as criteria for Smuts's claim to be classified as an intellectual.

Did Smuts make an original contribution to the public discourse of his time? There is no doubt that this was the case. Smuts thought deeply about the abstract and philosophical over a long period of time and *Holism and Evolution* was the product of his original thinking. In it he reveals himself as a seeker of the deeper underlying truth of what is in reality visible on the surface of nature and society. With holism, Smuts succeeded in exposing another dimension of truth. He establishes a framework of thought, which, admittedly, limps from a flawed empirical foundation and fails to bridge the gap between matter and spirit but serves as a stimulating starting point for further thought and investigation to better understand the universe.

Has Smuts's contribution been thoroughly noted, and did it make a significant impact on society in his own time and later? Because of the international fame that Smuts gained as a politician-statesman, there was extraordinary public interest in *Holism and Evolution*. In scientific circles, his holistic view placed him in the middle of the dispute between the idealist and materialist approaches. The Tansley-Smuts debate, at a time when a move towards a new scientific paradigm was taking place, but when a strong empirical basis had not yet been established in the ecological and other sciences, demonstrated that both Smuts and Tansley were seekers towards a new holistic perspective on reality. Foster and Clark (2008:311, 312, 316, 344) show that the two approaches to holism, represented by them, have moved closer together in the ecological sciences since the 1990s. They believe that they should be used as complementary rather than opposing approaches in an overarching realist-constructionist model.

Smuts is widely recognised in scientific circles as the pioneer of holistic thinking. In this chapter it has been shown that the impact of his holistic thinking was not limited to the 1920s and 1930s but has been revived since the 1980s as a starting point for the systems science approach. The increasing trend towards holistic thinking in the sciences makes it seem that Einstein's prediction that relativity and holism would be the most important scientific concepts in the new millennium has come true.

Both questions can therefore be answered unequivocally positively. In the light of that, I conclude that Smuts can be considered an intellectual, who made a constructive contribution to the public discourses of the twentieth and even the twenty-first centuries.

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