

**A scientific defence of religion and the religious  
accommodation of science?  
Contextual challenges and paradoxes<sup>1</sup>**

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**Introduction**

Religion features prominently in the public arena, albeit in defensive mode. This is evident in a constant stream of anti-religious – more especially anti-Christian – publications. There are many reasons: the conflict potential of religion, highlighted by the 9/11 catastrophe; the rise of Muslim fundamentalism; the aggressiveness of so-called new atheism; the exodus of members from mainline churches; the proliferation of spiritual groups and movements; the progressive annexation of traditionally religious areas by the state (human rights and ethics) and by science (cosmology, health). Pascal Boyer (2010:10) questions the existence of religion, making the idea of a science-religion debate absurd. In his view, the traditional sciences are confined to people's immediate, personal situation. From his anthropological angle he writes that 'most religious thought is not about the creation of the world, ... is rarely about God, ... is very seldom about the salvation of the soul .... People use their religious concepts to account for their uncle's death or their child's illness or their neighbor's good fortune, not to explain the persistence of evil or the existence of the universe' (Boyer 2010:13). Hence he shoots down theology: 'most human societies throughout history have managed to have religion without theology' (Boyer 2010:14). To some extent one has to concede his point at a global level. Theology is largely confined to the Christian West, and even there it is changing.

Boyer (2010:14) does not regard church dogma or religion's metaphysical heritage as a normal part of human religious experience: 'In places where a doctrine is available, indeed where people are taught that doctrine, and themselves believe they hold beliefs typical of the doctrine, there is a large and converging evidence that their actual thoughts and intuitions diverge widely from the doctrine.' Thus the accent is on personal circumstances and the role of religion in these.

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Despite the prominence of ‘new atheism’, religion is by no means disappearing.<sup>2</sup> It is, however, in a transitional age. Peter Berger predicts that the 21st century may well be the most religious century in 500 years! (Grassie 2010:54.) The critical question, of course, is whether it matters if religion is growing at the grassroots if the God of theology is dead. If religion is still growing, it is because people are uninformed. Badiou (2006:23) writes: ‘I take the formula ‘God is dead’ literally. It *has* happened ... God is finished. And religion is finished, too ... What is ultimately important here is to figure out the subjective mechanism explaining how people can so easily believe that it is nothing of the sort and that religion prospers; or even, as it is so often said at this time, that religion returns.’ But even if the theologians’ God is dead, is he also dead at an intellectual level? ‘... [T]he death of the God of religion leaves the question of the destiny of the God of metaphysics unresolved’ (Badiou 2006:26).

### *Religion is natural*

The premise in this paper is that religion is natural even though most religions are characterised by faith in the supernatural. Grassie (2010) maintains that religion is not necessarily supernatural<sup>3</sup> and does not inevitably involve a relationship with the supernatural. By definition this eliminates the possibility ‘that religions may intuit and infer, discern and discover, something empirically real and ontologically profound about the universe as a whole and human life within the universe’ (Grassie 2010:45). It does not deny that religion does recount ‘supernatural’ stories, to be regarded as imaginative myths. According to Grassie (2010:45-46), however, the mythologies could afford deeper insight into the human condition and a transcendent reality that can be substantiated both empirically and philosophically. Wolpert (1993:144) affirms this: ‘Unlike science, religion is based on unquestionable certainties. It is neither easy nor natural for most people to live with uncertainty, and religion can provide a solution to many problems, particularly moral ones. Thus all religious belief can be regarded as natural.’

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<sup>2</sup> Whereas Europe is becoming increasingly post-religious as far as Christianity is concerned, this religion is growing phenomenally in Latin America, Africa and Asia. However, the growth is mainly in Pentecostal and neo-Pentecostal contexts, centring on literal reading of the Bible, miracles, charismatic gifts and healing. Grassie (2010:66) affirms this: ‘In fact, the fastest-growing religions in the world today are Islam, Pentecostal Christianity, and amorphous New Age-type syntheses.’ More than 16 percent of all Americans say that they do not participate in organised religion (Leaves 2011:6, 9, 37). The number of adherents of Islam is also growing dramatically, although Leaves (2011:10) attributes it to population growth rather than new converts.

<sup>3</sup> Leaves (2011:181) points out that many people (in Sweden and Denmark) ‘... live in accordance with a non-supernatural, non-creedal humanism that has its origins in Christianity’.

Religion is natural because it is part of the evolution of humankind as an intelligent species. In that sense superstition, fantasy and all sorts of irrationality are equally natural.<sup>4</sup> But fantasy, superstition and irrationality are usually shrugged off or have little influence, whereas traditionally human lives were dominated by religion. Yet humans are also capable of logical thought and modify their behaviour in light of substantiated information and facts. In view of modern scientific knowledge, has religion not become redundant? We no longer need supernatural powers to explain the cosmos and live meaningful lives. Despite all this religion, far from disappearing, is growing and fundamentalism persists<sup>5</sup> in the face of criticism. Various reasons are advanced for this phenomenon. Humans are not purely rational but are also affective beings, who need explanatory systems and a sense of security to cope with misfortune, illness and death. Cupitt (quoted in Leaves 2011:181) observes: 'Religion is primarily not about belief, but about hope.' Religion is so interwoven with culture that it cannot conceivably be excised from architecture, art, literature and other religiously inspired cultural artefacts.

God's existence cannot be verified or falsified. But one can believe in him, although faith is not proof. For committed believers their faith in and experience of God is so powerful that it is sufficient proof of his existence. So even if God cannot be proved, one can prove that to many people he is the very ground of reality: he is a reality within the confines of individual lives. In a harsh and merciless world religion alone offers people individual attention, comfort and a sense of purpose in life. It offers a loving father figure who cares and provides for them (Feuerbach).<sup>6</sup> It offers outcasts a sense of community and promotes the survival of particular groups (Sloan Wilson).<sup>7</sup>

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<sup>4</sup> Even if religion in the traditional sense were to die out, it does not guarantee the end of human naivety, superstition and irrationality. These feed the gambling industry, present-day superstitions, the popularity of science fiction, unscientific health and rejuvenation practices, and the like.

<sup>5</sup> Christian theology is pre-eminently textual, because the book, canon or revelation was so focal in Christian religion from the outset. This was reinforced by the Reformation with its emphasis on texts and reached a zenith in 19th century 'higher criticism'. But growing hermeneutic and exegetical insight, structuralism, post-structuralism and, later, post-modernism failed to eradicate the prevailing fundamentalism of ecclesiastic practice.

<sup>6</sup> Boyer (2010:22) mentions that Schleiermacher sees religion as a 'sense and taste for the infinite (*Sinn und Geschmack fürs Unendliche*)'.

<sup>7</sup> Grassie (2010:74-75) identifies the following theories to explain the existence of religion: Religions provide explanations of natural phenomena and existential interests; they meet the need for comfort; they focus on communal rather than individual needs; they offer a mental-moral glue to unite people in social harmony; religion is an illusion. Humans are naturally superstitious and credulous; they are easily swept off their feet by wishful thinking. So religion offers explanations, comfort, social order and may be an illusion. For the relation between religion and superstition, see Du Toit 2011.

A cardinal reason for the need for God is the nature of human consciousness. A species capable of thought and consciousness inevitably conjures up metaphysical abstractions, substantiated by a deity. Consciousness cannot conceive of eternal non-consciousness, nonexistence. Thinking is binary and religion provides a convenient framework to accommodate human experience of good and evil. Of course, religion can also be considered *sui generis*, a unique phenomenon not reducible to other categories or human activities (see Boyer 2010:91).

*Science is not natural*

From the angle of the human life world, science is not natural. Most people experience it as counter-intuitive. People do not instinctively know the scientific principle underlying the wheel. We perceive the world as a totality and are oblivious of the quantum world of atoms within it. Neither is science concerned about the impact its findings may have on people's naïve ideas (see Wolpert 1993:29). Boyer affirms this: '... religious representations are highly natural to human beings, while science is quite clearly unnatural' (Boyer 2010:85).<sup>8</sup> By contrast, most people have an intuitive affinity with religion, which centres on their existential experience.

Etymologically the word 'science' probably derives from Latin *scire* (to know) and *scindere* (to divide, to split). The word 'religion' (Latin *religare*), on the other hand, means to bind or conjoin. That captures something of the nature of the two domains (see Grassie 2010:166). Religion amalgamates things; science takes them apart and examines them. The unity of the sciences, previously vouchsafed by the Christian tradition, has splintered and the accent has shifted to the autonomy of individual sciences.<sup>9</sup> Science is no longer subordinate to religion. Sociologically religion is reduced to a cultural phenomenon.<sup>10</sup>

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<sup>8</sup> 'Moreover, a comparison or contrast [between science and religion – CWdT] only makes sense against some background of similarity, but there is none between scientific theories, held and understood by a very small number of human groups, and the religious imagination, easily acquired and maintained by millions of people with no effort.' And: 'The results of scientific research may be well-known, but the whole intellectual style that is required to achieve them is really difficult to acquire' (Boyer 2010:85). That may be true, but one need not be a trained scientist to have a fair idea of what science is up to. People are better informed and, as information becomes more and more readily accessible, they become even more so.

<sup>9</sup> 'What can be said with confidence is that by the end of World War I in 1918 Britain had changed so significantly that science and religion had come to be viewed as separate enterprises' (Leaves 2011:64).

<sup>10</sup> Thus Durkheim, Freud and Jung explained religions as natural, human creations. 'Religions could be explained as 'social systems' that 'are transmitted culturally, through language and symbolism'' (Leaves 2011:65).

### *Religion in a transitional era*

Although religions appear to be growing,<sup>11</sup> Western Christianity is undergoing a transition, which may be attributed to the influence of science. God is no longer necessary to account for creation.<sup>12</sup> There are other factors as well. Globalism brings different cultures together, making shared spirituality possible. There is less concern about a hereafter,<sup>13</sup> but popular culture is much preoccupied with angels. The accent is on the present and an experientially rich life on earth. Life expectancy is increasing steadily.<sup>14</sup>

Although many religious leaders of mainstream churches are in touch with scientific developments and accept the sentiments consonant with modern ideas, it is extremely difficult to change the church 'from within'.<sup>15</sup> Mainstream churches should ask themselves how much traditional dogma can be forfeited without forfeiting their distinctive identity. Must their age-old creeds be modified to accommodate present-day thinking? To many that would imply loss of ecclesiastic identity.

The tacit assumption is often that the faith need not be sacrificed, because not all of it is literally true. Many believers continue to belong to mainline churches thought they no longer accept traditional doctrines that conflict with a modern worldview.

### *Progressive believers and spirituality: closer to a scientific worldview?*

To what extent is the growth of diverse spiritual groups that are mushrooming alongside the mainline churches prompted by anti-fundamentalism

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<sup>11</sup> Leaves (2011:10) cites the *World Christian Encyclopedia* statistics that the number of people who have no faith at all grew from 3.2 million in 1900 to 697 million in 1970 and 918 million in 2000. That is roughly one seventh of the world's population.

<sup>12</sup> '... the revolution in cosmology whose success Galileo ensured was to have enormous social implications, because from now on great institutions like kingship, religion and the moral order could no longer claim the sort of cosmic backing that they always had in previous societies' (Leaves 2011:59).

<sup>13</sup> 'This life is all that we have and we must take responsibility for ourselves, our fellow humans and our planet. Belief in God becomes redundant: a figment of our imaginations that can be discarded' (Leaves 2011:30).

<sup>14</sup> 'We must face our own death without the comfort of an afterlife; we must endow our projects with significance from within; we must find it in ourselves to fight for justice though the odds may be against us; and we must self-consciously build a new sense of community based on recognition of our and others' autonomic choices' (Joseph Levine, in Leaves 2011:31. See also Du Toit 2009).

<sup>15</sup> Grassie (2010:189) rightly comments: 'To try to read science back into ancient scriptures is an absurd way to validate a tradition.' There may be passages where it happens to be feasible, but in many more instances, it will be impossible. The Bible did not set out to make statements that would address the scientific worldview of people who were to live two millennia later.

and a scientific worldview? Many contemporary, religiously oriented people find the generic term 'spirituality' unsatisfactory because the groups are too diverse, and prefer to speak of spiritual pluralism. Spiritual groups do not aspire to 'church-hood', do not produce creeds and dogmas, are not necessarily missionary in their approach, are not structured organisationally, and so forth. It is not always clear in how far the groups differ from their original denominations and what they put in the place of the doctrines they have abandoned. There may well be many parallels with traditional Christian spirituality.

Many spiritual groups may be considered progressive, are often anti-theistic,<sup>16</sup> postmodern, secular and rational. Other attributes are non-literal reading of the Bible; ecological awareness; accent on meditation, mysticism, silence; influence of Eastern religions; preference for alternative conceptions of supernatural powers (e.g. synchronicity). Analogous with the thinking of the 19<sup>th</sup> century philosopher Emerson, the emphasis is on the potential of our unutilised inner abilities, creativity and spiritual depth (see Du Toit 2011b).

Many religious progressives would like to remain more or less true to their Christian tradition but hone their faith to conform to present-day scientific ideas. They insist on anti-fundamentalist scriptural exegesis and read biblical miracles and supernatural stories against the background of our contemporary worldview. It is very much an approach 'from below' with the accent on immanent transcendence.<sup>17</sup> Whether these changes will have an impact on scientists who are critical of religion is a moot point.

#### *Proposals for a working relationship between religion and science*

To many scientists the disparity between a scientific and a religious worldview is more problematic than to believers. Some believers appear to have no difficulty in reconciling the two opposing worlds in their lives, but from a scientific point of view science and religion are irreconcilable (Leaves 2011:38). In order to compare them one has to put them on a par and that is not feasible. Religion is far more complex than science. When science does confront us with really complex profundity it is no less mysterious than religion. Religion is more complex than science because it has to answer complex existential questions, allay human fears and meet personal needs, whereas science simply focuses on the building blocks of reality. The nature of a

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<sup>16</sup> A new breed of theist is emerging in nearly every denomination and religion across the globe. If we had a creed, it might simply be this: Reality is our God, evidence is our scripture, and integrity is our religion. (See Michael Dowd, *The advent of evolutionary Christianity: conversations at the leading edge of faith*. [www.skepticmoney.com/the-advent-of-evolutionary-christianity-](http://www.skepticmoney.com/the-advent-of-evolutionary-christianity-)).

<sup>17</sup> Immanent transcendence relates to Whitehead's process philosophy. 'Whitehead's God is radically transcendent and radically incarnate at the same time' (Grassie 2011:195).

building block is fairly easy to identify, define and formulate theoretically with no regard to personal complexities.

As we know, higher levels of complexity cannot be assessed according to criteria that apply at lower levels. Laws describing emergent phenomena are independent of laws at lower levels. Thus the laws of thermodynamics are independent of the laws governing the motion of atoms in classical quantum mechanics. At higher levels we are dealing with new factors. Uncertainty at quantum level, for instance, displays order at higher levels. Erwin Schrödinger (1992:10) describes it thus: ‘Only in the co-operation of an enormously large number of atoms do statistical laws begin to operate and control the behaviour of these *assemblées* with an accuracy increasing as the number of atoms involved increases’ (with reference to the completely disorderly heat motion of atoms). The principle is that circumstances at higher or more complex levels differ from those at primary levels where we deal with basic, physical components. Other factors come into play that have no influence at lower levels. The same applies to organisms. The laws governing the motion of bacteria are far simpler than those governing a leopard on the prowl. The basic laws of nature do not change, but a combination of complex factors come into play at higher levels.

McKenzie (2011:231) describes what this means for theology: ‘So, by analogy, we might consider the notion that theological truth is ‘robust’ and independent of the laws or concepts which govern behaviour at lower strata levels, such as anthropology, psychology and biology.’ Though one may not agree with this specific example, the principle could well be valid. To cite another example: science deals with facts, not emotions.<sup>18</sup> Religion is at the epicentre of human emotion. We are only beginning to understand the complexity, existential impact and biological drives underlying this. It will be discussed in more detail below.

We now turn to the role of physics in science and the implications for closed systems.

### **Physics and metaphysics: natural and supernatural; immanent and transcendent**

Comte sees metaphysics as the second phase of human evolution, myth being the first and science and pragmatism the last phase. Scientific objections to

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<sup>18</sup> That could be said of all sciences. But is it true? Pierre Hadot (quoted in Wynn 2005: 134-135) says, with reference to the early Greek philosophers, that their primary concern was not with ideas but with life questions, existential attitudes which determined all ideas, however abstract: ‘More exactly, he has characterised the “attitudes” which are typical of Stoicism as “tension”, “duty”, and “vigilance”, and those typical of Epicureanism as “serenity” and the “joy of existing”’ (Wynn 2005:135).

religion are encapsulated in the criticism that it is supernatural and metaphysical. Hence we need to take another look at metaphysics.

Metaphysical questions deal with essences. They could also be called ontological questions. Plato is the father of *essentialist philosophy*. The essence of things lies in the ideal world rather than the flux of our world. Essences (*eidoi*) are fixed and immutable, hence true. Aristotle rebelled against this notion. He is the father of metaphysics (Berger 1993:34).

Parmenides posed the essentialist/ontological question: what is it that *is/why* is there something and not nothing? Plato broadened this from an essentialist question (what *is*) to a judgment, for example 'it is beautiful', 'it is good'. Aristotle went even further, maintaining that according to Plato there are two kinds of judgment: judgments that pronounce on the qualities and relations of things, and ontological judgments. The latter always have a further dimension. 'The wood is white' is not so much a matter of the colour of the wood – it could have been brown (the colour of the wood is a chance/accidental attribute, distinct from its substantive nature). It concerns the essence of wood *per se*. Aristotle found this unacceptable and, good scientist that he was, he brought ideas down to earth and to the object under investigation. The essence of things is necessarily immanent, not something that exists in a separate world of ideas. As a result Aristotle is the father of physics as well, but Plato's problem of mutability still had to be solved.

Aristotle distinguished between things that change (i.e. move) and immutable (i.e. unmoving) things. The latter are things like mathematics that do not change from one day to the next. But how durable are things that move, like the sun? (In the Aristotelian paradigm the sun still moved from east to west every day.) Movement may cease when its cause disappears, which could stop even the movement of the sun. Hence he posited an unmoved mover who is not subject to change (Berger 1993:36). Moved movers are natural causes and are material, but the unmoved mover is not material. The unmoved mover belongs to a different order that exists alongside the physical order. Via the unmoved mover Aristotle arrived at being as the object of metaphysical thought. He called this order the first philosophy, which deals with immaterial forms, the soul and, of course, the divine. It is not the order of metaphysics but a condition for it.

That enables Aristotle to distinguish between material and immaterial substances. Physics is not universal because it focuses on concrete objects. Metaphysics is a universal science because it deals with both immaterial and material substances. If you know the immaterial substance (that which causes things), you can know both the physical characteristics and being itself (inasmuch as it exists – see the distinction between substantial and accidental characteristics). Immaterial substance, then, is the answer to Parmenides's ontological question: why is there something, as well as the question about



physical/sensorily observable objects (see Berger 1993:38-39). It could mean looking at an organism without inquiring what makes life, the planet, solar systems, the cosmos possible.

Why is this pertinent today? Simply because Aristotle's immanent, physically centred approach did not get rid of metaphysics. Unlike Plato, Aristotle was not a dualist, yet he still distinguished between physical being and Being as such. I consider his concern with Being as such the immanent transcendent aspect of his philosophy. But the sciences, too, cannot get away from the metaphysical aspect of reality/being.

*Examples of the metaphysical dimensions of natural science*

- Evolution depends on chance and necessity. How it will proceed in time is unpredictable, so it becomes a metaphysical entity.<sup>19</sup> Chance is such a huge potential force that it virtually assumes divine features. Chance (random possibility) and infinitely large numbers are interdependent. Multiplicity (number, relation, infinity) is the secret of the universe and of all life on our planet. Without multiplicity and the possibilities it permits in certain relations there would have been no creation or even life. (Note, this does not endorse the so-called anthropic principle, which maintains that the universe awaited, as it were, the advent of humans.) We know that the evolution of the universe relies on huge numbers, on the Goldilocks principle of neither too many nor too few.

*Successful new emergent developments depend on successful chance, which in its turn depends on large numbers*

The following is proof of the potential for biological diversity. There are twenty amino acids which, linked in certain combinations in long polypeptide strings, constitute the basic components of proteins, which in their turn determine the incidence and functioning of organisms. Regis (2008:95-96) cites this example: 'If a hypothetical protein was 200 amino acids long (which is not exceptionally long for a protein), then given the fact that there were 20 different amino acids that could occupy each of those 200 spaces, there were  $20^{200}$  possible amino acid combinations, which was a number approximately equal to  $10^{260}$ . By any standard, that was a big number; the number of elementary particles in the universe, by contrast, was thought to be 'only'  $10^{80}$ ' (also see Kauffman 2008:122). That indicates the vast potential of chance to produce diverse forms of life. If life on our planet had to start from

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<sup>19</sup> Accordingly Kauffman (2008:131) maintains that physical laws on their own cannot explain the emergence of the cosmos.

scratch (i.e. without building on antecedent life forms), it probably would have been very different. Chance introduces a completely different ball game from a process based on causality.

A typical cell comprises some 20 000 different proteins. A small cell might contain 100 million protein molecules. The human body has some ten trillion ( $10^{13}$ ) cells and 210 types of tissue. In addition some 100 trillion prokaryotic cells (Ecoli bacteria) live in our intestinal tract (see Grassie 2010:167-168).

When we look at the universe of the human brain we are again overwhelmed by vast numbers. We have about 100 billion neurons, each with on average 7 000 synaptic connections. A three-year-old child has about  $10^{16}$  synapses. That means the number of neurons in the human brain roughly equals the number of stars in the milky way – plus-minus 100 billion (Grassie 2010:94-95). But that is only half the story. Add to this the brain's interactions with the outside world and an infinite number of creative possibilities opens up. Consider, moreover, that human consciousness and thought rely on each synaptic contact as well as a combination of numerous simultaneous contacts. It follows that a human person is necessarily creative, imaginative and highly complex. That is apparent in the artworks, literary creations and religious activities that are hallmarks of human life. Restricting the human brain religiously, philosophically or in any way whatever is to restrict a whole universe of emergence.

The human brain is incontestably the best example of emergence in the universe. Human consciousness, whilst immaterial, is a product of matter, of electrochemical processes. Not that our imagination is not spellbound by the manifestations of emergence in the knowable universe: the physicality that preceded the big bang, the birth of stars, the generation of planets by exploding suns, the origin, diversification and evolution of life. Just as every person is unique, so the emergence of each new species is unrepeatably unique. That is why it is wrong to try to reduce the multifaceted origin of any bit of reality to some underlying component.

Whereas science can identify the laws that account for the evolution of life, it cannot predict the type of life that will be based on those natural laws. That is why emergence opposes any form of reductionism. Self-organisation (cf. cellular autopoietic systems) is a case in point: 'Self-organization ... is both emergent and not reducible to physics' (Kauffman 2008:101). Emergence should be seen as a metaphor for all the complex processes that give rise to new developments, like large numbers, adequate time, ideal circumstances and chance. The elements assume metaphysical features because the nature of the emergent phenomena is unpredictable.

### *Blurring boundaries*

- The fact that emergent phenomena are complex and rest on many assumptions often makes it difficult to tell where one process ends and another begins. Transitions are gradual and interdependent, and environmental factors enter into it. Whatever hierarchical systems are assumed, higher levels cannot be dissociated from the lower levels underlying them. This has implications for the causal relation that is often taken to exist between two phenomena.

As science progresses the dividing lines between entities become more and more blurred: boundaries between life and non-life, matter and mind, brain and reason, between species and specimens, natural and supernatural, transcendence and immanence. Genome research has revealed the interrelationship of all forms of life: ‘Proof of the universal common descent of all organisms, for example, is provided by the fact that the living cells of all earthly creatures share the same basic methods, means, and modes of operation: they express their genetic information in nucleic acids, use the same genetic code to translate gene sequences into amino acids, and (with some exceptions in the case of plants) make use of the same twenty amino acids as building blocks of proteins’ (Regis 2008:110). Uniform biochemistry implies common descent.<sup>20</sup>

Advances in the life sciences and research technology make it increasingly clear that we might still distinguish between life and nonlife, but the two are no longer readily separable. Life presupposes its building blocks. The more minutely we observe it, the more difficult it becomes to discern the dividing line. As Sir Charles Sherrington (1953:209) points out: ‘Aristotle noted of life that its lower limit defies demarcation. The living and the non-living, he thought, merge one into the other gradually. Today the very distinction between them is convention. That deletes “life” as a scientific category; or, if you will, carries it down to embrace the atom. The vanishing point of life is lost.’ The unity of life and nonlife means that the creation of the cosmos and the emergent processes that established our little planet should be seen as a long evolutionary history of emergence. In these processes natural law, time and chance all played a role.

This can also be explained in terms of Aristotle’s distinction between material and immaterial substance. If Aristotle had not made that distinction, there would have been no way to distinguish between being (observable

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<sup>20</sup> ‘The point is to appreciate that the genetics of even simple bacteria is very much part of the human genome today ... If we want to talk about the biology of religion, we need to understand that we all still possess the genes, physiology, brains, and sociality of hunter-gatherers, albeit living in a very different environment today’ (Grassie 2010:77, 78).

objects) and Being (what *is* and all the questions it raises) (see Berger 1993:39). And then we could know the world only at a one-dimensional physical level. That, too, is impossible, because as knowing subjects with imaginative minds we are incapable of such one-dimensional perception.

The boundary between god and humans is likewise fading. Aristotle is the philosopher of surprise and wonderment, but he added that our amazement is often prompted by ignorance and soon vanishes when we acquire knowledge. Via the divinity of knowledge god and humans are interrelated. Knowledge is to see (*theoria*) – to see God (which is also the word for theory). Such seeing is not merely looking *at* (theoretical seeing) but entails experiential knowledge (Berger 1993:49).

#### *Emergence supersedes the dominance of causality*

After Aristotle causality became the abracadabra determining all new phenomena. Now it was joined by chance, which introduced contributory factors like environmental ones that differ from one place and time to the next. As a result it is impossible to predict causal outcomes with any certainty, which applies par excellence to a complex species like *Homo sapiens*. The concept of emergence stands causality on its head.

Heidegger (1975:175) pointed out that the Latin word *res* means something that affects you (that which concerns somebody, an affair, a contested matter, a case at law). It differs from the Latin *causa*. 'In its authentic and original sense, this word in no way signifies 'cause'; *causa* means the case and hence also that which is the case, in the sense that something comes to pass and becomes due.' That is how we should understand causality, not in the sense of a cause or an effect. That makes 'emergence' a more apposite term, because it accentuates the present circumstances that give rise to a phenomenon. The traditional interpretation of causality is reductive and fails to take proper account of the different evolutionary levels over time and the host of influences (however slight) that affect the process.

In contrast to the Greek notion of One Immaterial Unmoved Mover we now posit a multitude of material, moving entities as the ground of all that exists!

#### **Metaphysics as immanent transcendence**

To return to Aristotle, he distinguished between physically observable beings and Being (which entails the ground of being and other metaphysical questions). In the case of observable objects, Kant distinguishes a *Ding an sich*, because we can never know the 'true' essence of things. Hence he concurred with Plato's notion of a different order, the difference being that to Kant that

order is not knowable. He distinguishes between a sensory world (*sensibile*) and a mental world (*intelligibile*) (Du Toit 1984:149). Humans also have a super-sensory nature, which manifests itself in moral laws. It differs from the natural world because it presupposes an ideal world (Berger 1993:27). But the super-sensory world is not supernatural, even if it transcends the natural world.

Nietzsche accused Christianity of ‘essentialism’ (read fundamentalism), which ascribed a fixed, a-historical character to reality that left no scope for individual creativity (Berger 1993:8). Heidegger opted for Dasein in its historicity and openness. Thought is subject to temporality (Berger 1993:14-15). Authentic metaphysics concerns ontological or metaphysical experience. To Heidegger experience is something ‘*dass es uns widerfährt, dass es uns trifft, über uns kommt, uns umwerft und verwandelt*’ (that it experiences us, hits us, befalls us, bowls us over and transforms us) (Berger 1993:33). We usually personalise our experiences. To experience reality is to experience a subjective force (Being/God/the Other/Fate) that uses us to make history. That is experience as immanent transcendence. It is immanent because the reality we experience is this-worldly; it is transcendent because it surpasses my expectations, demolishes my self-centred autonomy and descends on me from an open future.

Metaphysics is historically variable and not incarcerated in essentialist categories (Berger 1993:19). Unlike particular philosophies, metaphysics cannot be essentialist. The question is: is science guilty of essentialism? Essentialism correlates closely with positivism (Berger 1993:37).

Can science answer the question about being and Being? Present-day scientific research is clearly concerned with Being – the ground of the being of objective physical reality. That is the question why the universe and its laws are the way they are<sup>21</sup> and not different (the *Ding an sich* in present-day science). The only answer is that it simply is what it is. It is the character of Being that reveals itself to us in its enigmatic uniqueness. But the way science answers the question about Being is profoundly unsatisfactory. Natural laws are what they are, we don’t know why.<sup>22</sup> Life owes its character to chance: ask no more – we can never know the nature and circumstances of singularity (the moment that triggers the big bang). Science will no doubt gain greater clarity about the nature of the physical world, but the answers it offers are not directed to human existence. For existential answers we have to turn to other sources. Metaphysics in the sense of essentialism directly affects

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<sup>21</sup> Kaufmann (2008:131) writes: ‘...we scientists have believed that the universe and all in it are governed by natural laws, Newton’s, Einstein’s, Schrödinger’s. Let me call this the Galilean spell. Under this spell, we have believed reductionism for over 350 years.’

<sup>22</sup> To Grassie (2010:192) the feasibility of science is proof of the idea of God by another name: ‘Science itself is an ‘intimation of transcendence’.’

human beings. Hence science does not yield original truth; it simply explains an existing domain of truth. It does not get beyond an empirical explanation of empirical data. If it were to move closer to the question of truth – to the essential revelation of that which exists – it would be philosophy (Du Toit 1984:49).

### **Integration of emotional affect and cognitive insight**

Science is not interested in human emotion except as a field of research.<sup>23</sup> Human fear, love, passion, desire have no place in the domain of reason. We know moods to be part of human emotion (the limbic system). Moods characterise our state of mind, the affective quality of the moment, the enthusiasm or tranquillity we experience, the conviction and intentionality we live by. Moods can be lasting, and as such express our worldview and motivation in dealing with the world. In that respect religion remains a cardinal medium for expressing our moods. Clifford Geertz's definition of religion puts it aptly: 'Religion is a system of symbols which acts to establish powerful, pervasive, and long-lasting moods and motivations in people by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic' (Grassie 2010:45).

The role of mood and affect in our thinking is not a new idea. Auguste Comte already noted it: 'In Comte's view, humanity needs to heal the fissure between our cognitive lives, informed by modern science, and our affective lives, informed by our loves and passions. The Order based on reality was unable to satisfy the emotions so well as the Order based on fictions' (Grassie 2010:36). We find it difficult to account for their role in our thinking and our need for philosophical systems and religions. In this regard William James (quoted in Wynn 2005:123) says: 'I doubt if dispassionate intellectual contemplation of the universe, apart from inner unhappiness and need of deliverance on the one hand and mystical Emotion on the other, would ever have resulted in religious philosophies such as we now possess. Men would have begun with animistic explanations of natural fact, and criticised these away into scientific ones, as they actually have done... These speculations must, it seems to me, be classed as over-beliefs, buildings-out performed by the intellect into directions of which feeling originally supplied the hint.'

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<sup>23</sup> 'Science assiduously tries to minimize the subjective and maximize the objective in its rigorous conversations with natural phenomena, so much so that it often ends up denying subjective experience as significant datum in the metaphysics of science and life' (Grassie 2010:199).

The emotional aspect of our thinking – indeed, of any rational activity – is seldom considered, because it is so hard to fathom. What is the cognitive impact of emotions? Do they function independently of cognition? Do they influence thought? The answer to these questions co-determines the answer to a further question: is the need for religion purely rational, or is it also emotional? If it is found to be a powerful emotional need, the validity of religion cannot be determined on purely rational grounds.

Transcendence can be contemplated if the emphasis is not exclusively on rationality, as in the case of Eastern mysticism. Hence, we can have an affective awareness of God that cannot be communicated discursively. Schleiermacher refers to a sense of total dependence; Rudolf Otto's *mysterium* can be expressed as “‘stupor’, which involves ‘blank’ wonder, an astonishment that strikes us dumb, amazement absolute” (Wynn 2005: 125). Especially in children one observes an intuitive sense of God, not articulated in cognitive categories. Newman (quoted in Wynn 2005:124) puts it thus: ‘It is an image of the good God, good in Himself, good relatively to the child, with whatever incompleteness; an image, before it has been reflected on, and before it is recognized by him as a notion. Though he cannot explain or define the word ‘God’, when told to use it, his acts show that to him it is far more than a word.’

My behaviour towards someone I either love or hate is different from my usual behaviour. Affect colours our behaviour. Some people's tone of voice changes when they pray. Emotions often affect our bodily posture: muscles tense, one assumes an aggressive posture when threatened. Bodily posture accompanies many religious affects: hands thrown in the air, kneeling to pray. But are affect and thought mutually exclusive? ‘The affective complexes that arise in this way will be unified states of mind, and will owe their intentionality in part to feeling’ (Wynn 2005:133).

What does this have to do with the relation between science and religion? It means that science is a human enterprise and that all facets of human beings should be considered without compromising scientific integrity or methods. Allowing for all facets of human beings implies paying attention to a cardinal aspect of life that emerged in the course of evolution, namely affect. The gift of the limbic system and emotion probably helped our forebears to survive and we still need it today to take on the challenges confronting our planet and all forms of life. Religion is pre-eminently suited to accommodate human emotion and it should be harnessed to sensitise everyone to the future of life on our planet. Here many African traditions and the way they accommodate emotion are instructive.

### *Emotion in African belief*

Africans on the whole relate comfortably to their bodies and have no difficulty expressing emotion in a cultural context. Whereas worship in, for example, white Protestant churches is largely a cognitive process, African religious practices are often both physical and mental. That reflects Western dualism, which associates reason with the mind and emotion with the body. In evolutionary terms emotion relates to survival – the fight or flee syndrome. If I face an assailant with a knife, my fear (emotion) activates my mind body (bodily arousal) simultaneously. Emotion is not confined to the mind. Emotions are not something that people ‘have’, they are constituted of people’s states, values and arousals.

In traditional Africa emotion and physical posture are united. Traditionally spirituality was governed by emotion, not dogma. (This is true of charismatic believers on all continents.) The drumming, song and dance accompanying African religious activities are highly emotive. That is not to say that there is no order, or that any emotion is permitted. Emotion is culturally influenced and different ethnic groups will have different accents (Dzokoto 2010:68). Hence, culture determines not only thought but also emotion and acceptable ways of expressing it. Emotion manifests itself in physical action. Dzokoto (2010:69) writes that the Anlo of southern Ghana have over fifty words to describe the way a person walks, each reflecting an aspect of the person’s identity, social status and wellbeing. They also have a word, ‘*seselaelame*’, which may be rendered as ‘feel-feel-at-flesh-inside’. It refers to ‘a culturally elaborated way of simultaneously attending to one’s body, and orienting to objects and the environment (Dzokoto 2010:69).<sup>24</sup> Dzokoto (2010:70) points out the importance of expressing distress physically so others can see it, since it contributes to social harmony.

Applied to scientific work, the example suggests that recognition and integration of our bodies, including affects, with our mental activities could help to make science more human and holistic. Probably future cognitive research will afford greater insight into the relation between thought and emotion and will deepen our understanding.

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<sup>24</sup> This is discussed by Wynn as well. ‘On this view (of Robert Solomon –CWdT) the world by way of emotional feelings involves an awareness (however peripheral) of body state, and for this reason one can speak of ‘feeling’ here; but this feeling is at the same time directed towards the world, because it is an awareness of the body as a whole as ready for action in the world’ (Wynn 2005:120).



## Conclusion

Religion, like science, is a natural part of the human condition, but they are two different facets and do not function at the same level. That does not mean that they do not influence each other and they should certainly be related to each other. Both science and religion are constantly changing, albeit for different reasons. Christian theology and faith are in a transitional phase. How it will evolve depends partly on its interaction with the sciences. Meta-physical features in science does not make it unscientific. They are simply unavoidable. Religion does not have to be supernatural to be meaningful. It could be reinterpreted in ways that do not conflict with basic scientific ideas. The challenge is to do so plausibly.

God is a metaphor for life that is emerging in all its variation and possibilities. It is analogous with Heidegger's enlightenment of being; Levinas's Other;<sup>25</sup> Sartre's notion of *pour soi*. It is the newness of the world (Heidegger's *Welt*) transformed from matter (Heidegger's *Welt-Erde* distinction) (Du Toit 1984:46-48). It is the newness of the improvisation that emerges uniquely in a familiar work of art (Gadamer 1977:41ff). It is Caputo's concept of an event.<sup>26</sup> It is the '*neti neti*' ('not so, not so!'), in response to any final interpretation of reality) of the Chinese Kung Fu. None of these possibilities is dependent on the supernatural. It is immanent transcendence in all its startling newness.

Kauffman (2008:288) epitomises this position: 'Then the unfolding of nature is God, a fully natural God. And such a natural God is not far from an old idea of God *in* nature, an immanent God, found in the unfolding of nature ... This that we discuss is a science, a world view, and a God with which we can live our lives forward into mystery.'

To sum up: recent fascinating scientific developments enable us to broaden the constricting notion of causality with the concept of emergence. That implies millions of years of evolutionary development into startling new life forms. Maybe the time has come to translate divine predestination into chance circumstances that open up new opportunities that are seen as the breakthrough of transcendence. Science can never explain everything.

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<sup>25</sup> '... it is precisely because the face of God is transcendent that the only form in which you will ever find the face of God is in the face of the neighbor, which is where you should direct all your attention' (Robbins 2006:79).

<sup>26</sup> 'The crucial move lies in treating the event as something that is going on *in* words and things, as a potency that stirs within them and makes them restless with the event' (Robbins 2006:50). That is what Vattimo calls secularisation: '... which means not the abandonment or dissolution of God but the "transcription" of God into time and history (the *saeculum*), thus a successor form of death of God theology.' He sees nihilism and kenosis as parallels. 'Nihilism is the emptying of Being into interpretive structure; kenosis is the becoming nothing of God as transcendent deity' (Robbins 2006:74).

Ultimate questions – exemplified by Parmenides’ ‘why anything at all?’, Aristotle’s Unmovable Mover, Kant’s *Ding an sich* – are unanswerable, even by science. Inasmuch as religion keeps raising these tantalising questions and seeks to integrate them with human life, it will remain a human datum.

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