

Part 8

The New Biology

The denial-free, *real* biological story of life on Earth

Before presenting the real, fully accountable, truthful biological story of life on Earth it should be emphasised that what is to be described does not bear any relationship whatsoever to all the human-condition-avoiding, dishonest, mechanistic/reductionist biological thinking that has been filling the biology shelves of libraries the world over since Charles Darwin first put forward his truthful concept of natural selection in 1859. Indeed, when Charles Birch observed that **‘Biology has not made any real advance since Darwin’** (In recorded conversation with this author, 20 Mar. 1987) he was acknowledging what has happened—or, more accurately, ‘not happened’—in biology as a direct result of its practitioners taking the evasive, human-condition-avoiding, denial-complying, mechanistic/reductionist-not-holistic/teleological path.

In Part 4:12 I documented and analysed the litany of dishonest biological thinking that followed the original denial-complying misrepresentation of Darwin’s idea of natural selection as being a divisive, selfish, ‘survival of the fittest’ process. From that initial corruption—which took the form of Social Darwinism—to Sociobiology, and then Evolutionary Psychology, and then the by-products of natural selection theory, and then Multilevel Selection theory, through to the theory of Eusociality, we have seen how biologists desperately sought to find a way to explain human behaviour without having to confront the *real*, psychological issue of our human condition—and we saw how, as a result of that approach, they got absolutely nowhere in their thinking. You can’t find the truth with lies. So again, the biology that is about to be presented here in Part 8 bears no relationship to all that dishonest biological thinking. What follows *is* the fully accountable and thus true biological story of life on Earth.

Part 8:1 Integrative Meaning and our necessary denial of it

A very important question that needs to be addressed is what was humans’ original instinctive orientation? While it certainly wasn’t to the migratory flight path that instinctively guides Adam Stork, we humans must have had an instinctive orientation to life before we became a fully conscious species, and indeed that instinctive orientation must still exist within us, so what was it? The answer, which will now be explained, is that *our* instinctive orientation was to behaving in a completely cooperative, unconditionally selfless, fully altruistic, loving way. If you are a biologist the query that should immediately arise in your mind on reading this is, ‘But how can such unconditionally selfless behaviour possibly develop when the fundamental situation is that genetics can’t develop unconditionally selfless traits because such self-sacrificing traits tend to self-eliminate and for a trait to develop and become established it needs to reproduce and carry on?’ Self-eliminating traits apparently cannot develop in animals.

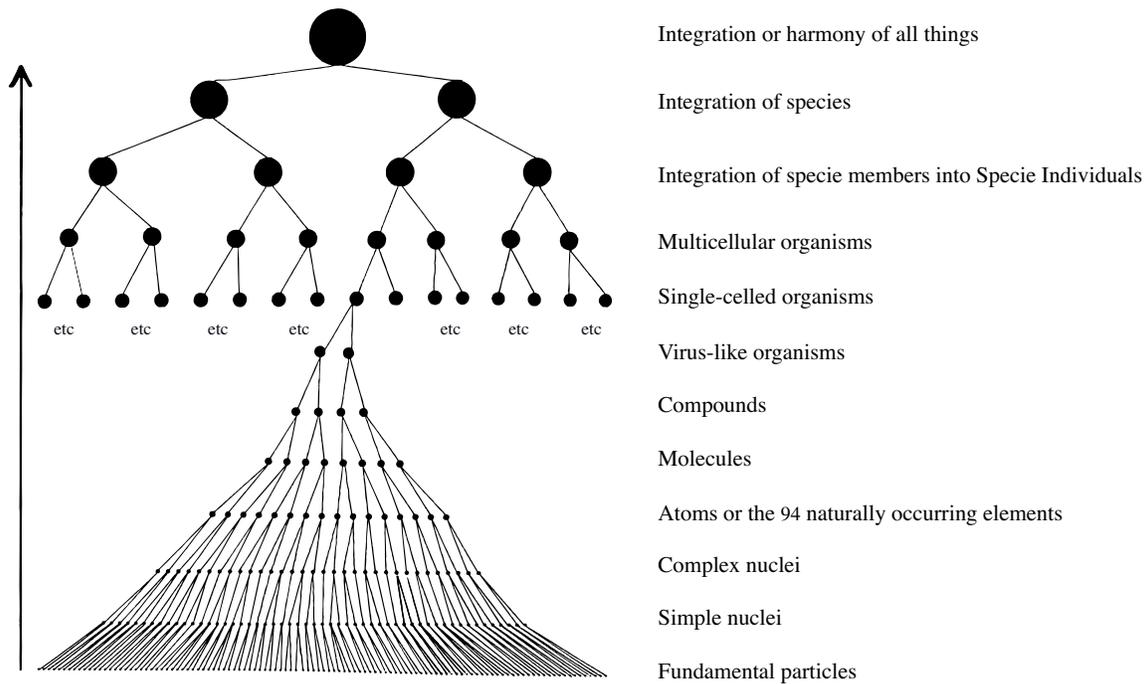
As has already been discussed, the most selflessness that can seemingly be developed genetically is reciprocity, where an animal behaves selflessly on the condition it is or will be treated selflessly in return, which means the trait is, in fact, intrinsically selfish and thus able to carry on from generation to generation. So how could our species have developed an original instinctive orientation to behaving in an *unconditionally* selfless, *truly* altruistic way?

To answer this question, it is first necessary to more fully explain Integrative Meaning because the integrative, cooperative theme or meaning of existence that we humans were instinctively orientated to is actually what ‘God’ is the personification of—so when we defied our instincts we were in effect defying the integrative ideals or ‘God’, which produced an extremely guilt-ridden state. Thus, an understanding of Integrative Meaning will account for the extraordinary sense of guilt that lies at the base of the problem of the human condition. (Note: While Integrative Meaning was briefly introduced in Parts 3:4 and 4:4B, a much more detailed explanation now needs to be presented.)

The most obvious characteristic of our world is that it is full of ‘things’, ‘objects’—enduring arrangements of matter, in fact—such as trees, animals, houses, rocks and clouds, etc. When we look around that is what we see, all these things, these enduring arrangements of matter, these collections of parts that stay together in a fixed arrangement through time. And not only that, it is obvious that all these arrangements of matter consist of a hierarchy of ordered parts; a tree, for instance, is a hierarchy of ordered matter—it has a trunk, limbs, roots, leaves, bark and wood cells. Our bodies are a similar collection of parts, as are our homes, which are built from different molecular compounds. Everywhere we look there are hierarchies of ordered matter, collections of elements or parts. Furthermore, what we see has happened over time to these arrangements of matter is that there has been a progression from simple to more complex arrangements. From the fundamental ingredients of our world of matter, space and time, matter has become ordered into ever larger in space and more stable or durable in time arrangements.

To elaborate, our world is constructed from some 94 naturally occurring elements—hydrogen, helium, lithium, beryllium, boron, etc—that came together to form stable arrangements. For example, two hydrogen atoms with their single positive charges came together with one oxygen atom with its double negative charge to form the stable relationship known as water. Over time, larger molecules and compounds developed. Eventually macro compounds formed. These then integrated to form virus-like organisms, which in turn came together or integrated to form single-celled organisms, that then integrated to form multicellular organisms, which in turn integrated to form societies of single species that then integrate to form stable, ordered arrangements of different species. Clearly, what is happening on Earth is that matter is integrating into larger and more stable wholes. And this development of order is not only occurring here, it is also happening out in the universe, where, over the eons, a chaotic cosmos has organised itself into stars, planets and galaxies. As two of the world’s greatest physicists, Stephen Hawking and Albert Einstein, have said, respectively, ‘**The overwhelming impression is of order...[in] the universe**’ (‘The Time of His Life’, Gregory Benford, *Sydney Morning Herald*, 28 Apr. 2002), and that ‘**behind everything is an order**’ (*Einstein Revealed*, PBS, 1997).

The following is a chart of the development of order of matter on Earth.



Development of Order or Integration of Matter on Earth
A similar chart appears in Arthur Koestler's 1978 book, *Janus: A Summing Up*

To account for this integration of matter, it is necessary to introduce the Second Law of Thermodynamics, which, like gravity, is one of the physical laws of existence. This law states that over time all forms of energy, and matter is a form of energy, tend to end up as heat energy. This Second Law of Thermodynamics can also be stated in terms of the concept of entropy, which is the degree of randomness of a system at the atomic, ionic, or molecular level. Stated in terms of the concept of entropy, the Second Law of Thermodynamics says that the entropy, or randomness, of a system increases with time.

Importantly, however, this natural direction of energy transfer *is* reversible but to reverse it requires the use of energy from an *outside* source if the system is not to eventually wind down to heat energy, to the maximum degree of randomness or entropy. This reverse direction where, instead of breaking down, matter builds up and becomes more ordered and complex is recognised in physics as the 'Second Path of the Second Law of Thermodynamics' or 'Negative Entropy'. Earth, as it happens, is not a closed system but an open system because it has an outside inflow of energy from the sun and, as such, an opposite direction to this breakdown towards heat energy has been possible. On Earth, instead of matter breaking down there has been a steady building up or integration of matter into ever larger and more stable arrangements of matter; there has been a steady development of order. Thus, subject to the influence of Negative Entropy, the 94 elements, of which our world is built, develop ever larger and more stable wholes. (Incidentally the universe may not be a closed system either—thus the possibilities of maximum entropy, the so-called 'heat death of the universe', is not yet able to be determined.)

In summary, Negative Entropy causes, or allows, or has led to, matter self-organising into larger and more stable wholes. It has led matter to integrate, develop order—a path, as mentioned above, that has resulted in atoms arranging themselves, or coming together, or integrating, to form molecules. Those molecules have, in turn, integrated to form compounds, which have then integrated to form single-celled organisms, which have then integrated to form multicellular organisms. The next larger whole to form is integrations of multicellular organisms, which societies of multicellular organisms represent the beginnings of.

So the theme of existence, the overall direction or destiny of change, or, from a conscious observer's point of view, the overall purpose or meaning of existence, is the ordering or integration or complexification of matter.

In fact, the concept of 'holism' is an acknowledgment of this Integrative Meaning of existence. The 'alternative' culture has embraced the word holism on the superficial basis that it refers to the interconnectedness of all matter; however, the true, deeper, core meaning of **holism** is **'the tendency in nature to form wholes'** (*Concise Oxford Dict.* 5th edn, 1964). The concept was first introduced by the great South African denial-free thinker or prophet, the statesman, philosopher and scientist **Jan Smuts** (1870-1950) in his 1926 book *Holism and Evolution*. Smuts conceived 'holism' as **'the ultimate organising, regulative activity in the universe that accounts for all the structural groupings and syntheses in it, from the atom, and the physico-chemical structures, through the cell and organisms, through Mind in animals, to Personality in Man'** (p.341 of 380). **'Teleology'**, **'the belief that purpose and design are a part of nature'** (*Macquarie Dict.* 3rd edn, 1998), is, like holism, another term that has been used to describe the integrative purpose or meaning or theme or design in the universe.

But while the integrative meaning of existence *is* the most obvious of all truths, it has also been the most difficult of all truths for us humans to acknowledge, and for an *extremely* good reason.

The difficulty arises from the fact that for a collection of parts to stay together as a whole, the parts of the whole must cooperate, behave selflessly, place the maintenance of the whole above the maintenance of themselves. Put simply, selfishness is divisive or disintegrative while selflessness is integrative. But, if the meaning of existence is to behave *integratively*, which means behave cooperatively and selflessly, *why* do we humans behave in the completely opposite way, in a competitive and selfish *divisive* way? The integrative theme of existence confronts us humans squarely with the issue of the human condition, the issue of our non-ideal behaviour. So the situation has been that until we could explain why we humans have been divisively rather than integratively behaved, Integrative Meaning has been an unbearable truth. To admit the truth of Integrative Meaning we first had to explain the human condition. So it's only now that we can explain the human condition, explain the good reason why we have been divisively behaved, that it has become psychologically safe to admit and talk about the truth of Integrative Meaning.

To reiterate, the reason why the cooperation-dependent truth of Integrative Meaning has been *so* unbearable prior to finding the reconciling understanding of our divisive condition is that for a larger whole to form and hold together, for matter to integrate, the parts of the developing whole *have to*, in effect, consider the welfare of the larger whole over their own because if they don't cooperate, if they behave selfishly, inconsiderately towards each other, then the whole disintegrates—the parts break down into the more elementary building blocks

of matter from which they were assembled. For integration to occur, the parts of a developing whole *must* cooperate not compete, they *must* behave selflessly not selfishly. Selflessness is actually the theme of existence because it is the glue that holds wholes together; it is, in fact, the true meaning of the word ‘love’, with the old Christian word for love being ‘*caritas*’, meaning charity or giving or selflessness (see Col. 3:14, 1 Cor. 13:1-13, 10:24 & John 15:13). So ‘love’ is cooperative selflessness, and not just selflessness but *unconditional selflessness*, the capacity, if called upon, to make a full, self-sacrificing commitment to the maintenance of the larger whole. Again, the immense problem with this truth is that if the meaning of existence is to be cooperative, loving and selfless, then why are we humans competitive, aggressive and selfish? If the theme of existence is to be integrative then why are we divisively behaved? And so despite it being such an obvious truth, Integrative Meaning has been *so* horrifically condemning of the competitive, aggressive and selfish human race that we have had no choice but to live in near total denial of it.

When I first started thinking about the human condition I tried to figure out what the theme or meaning of existence was and after some thought I realised that it was this development of order of matter. As I say, Integrative Meaning is actually a completely obvious truth, although almost everyone lives in denial of it. This is an important point: I wasn’t clever to find the understandings of the human condition and the many other insights I have found, such as how we humans developed an unconditionally selfless moral instinctive self or soul and how we became conscious when other animals didn’t, all of which will be explained shortly, I was simply not living in denial of truths that everyone else knew but were living in denial of—and by acknowledging those truths I was able to think truthfully and thus effectively and thus explain all manner of phenomena that those who were living in denial had no access to. To deny something you first have to know it, so when I ‘discovered’ the truth of Integrative Meaning I wasn’t discovering anything that everyone else didn’t already know. Recall earlier in Part 5:1, in the mythology of King Arthur and the Holy Grail, how a ‘*guileless*’, ‘*wholly innocent*’, ‘*simple, naive youth*’, ‘*an isolated country...boy*’, raised in ‘*primitive circumstances*’, was the only person who could ‘*heal*’ the ‘*wound*’ in the ‘*existentially lonely*’ ‘*alienated people*’ of his kingdom. Everyone knows the truth of Integrative Meaning but virtually everyone spends every moment blocking that truth out from their mind because it is so unbearable; I, on the other hand, ‘*naive[ly]*’, ‘*guileless[ly]*’, ‘*innocent[ly]*’, simply admitted it.



My original 1977 Development of Order drawing

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So, on 2 June 1977, I summarised what I could see was going on in the world by drawing three dots in the shape of a triangle. I then put an arrow to those three dots repeated, only this time semi-connected with dotted lines, and then added another arrow to the three dots repeated again but fully connected by solid lines. For me this pattern described the

development of order of matter that I could see occurring everywhere in nature. I then showed this diagram to some friends at the time to see if they knew what this process was called and what was causing it. One friend, Dave Angliss, who had studied Rural Science at the University of New England in regional New South Wales (and also attended Geelong Grammar School when I was a student there), told me that what I was looking at was ‘systems’. He said he was taught that a woolshed (where sheep are shorn) represents a system, a collection of parts, but the woolshed was also part of a sheep farm or property, which was a collection of parts, and in turn the property was part of a district, and so on. I then searched the library at Sydney University where I had been a student and found a Russian book titled *Modeling of Thinking and the Mind* (N.M. Amosov, 1965) that explained systems analysis even more clearly. It described how the development of systems had certain universal characteristics and once you understood those characteristics you could apply them to any system development. So just as pulling the cork out of a bottle is difficult until it suddenly gives way, solving a problem is difficult until you hit upon the answer and the logic suddenly becomes apparent. Clouds merge into a mass and produce rain, ideas similarly come together and, at a certain point, produce a surprising outcome. You can approach a problem from all manner of weird angles and thoughts, and by so doing hit upon ideas that throw up a solution to the problem. I have learnt that the ability to think laterally, which is so important in problem solving, comes from recognising that the principles behind the development of systems are universal. You don’t know where the solution to a problem will come from, but the more you open your mind up to what is happening in other situations the more likely you are to find the clue that solves your problem. Indeed, the universal principles involved in the development of systems are so important in our ability to find understanding of the world around us that in the denial-free future they will be one of the main subjects taught at school. The point I wanted to make here is that of all the principles in system development that I have learnt about, it is the integration of systems into larger wholes that is the main principle. Another friend, Mike Rigg, told me about a book that another friend, Deeta Colvin (who later married Rod McGeoch, a key person in Sydney’s successful bid for the 2000 Olympics) had been reading, titled *Janus: A Summing Up* (1978) by Arthur Koestler, which contains a similar development of order of matter chart to the one included at the beginning of this Part. I had drawn my own version of this chart, of circles within circles, but it was not as simple in its layout as Koestler’s version. I’m not certain but I think it was from reading *Janus* that I first learnt that the law of Negative Entropy was the law of physics that causes matter to integrate.

In *Janus*, in the chapter titled ‘Strategies and Purpose in Evolution’, Koestler wrote that **‘One of the basic doctrines of the nineteenth-century mechanistic world-view was Clausius’ famous “Second Law of Thermodynamics”’. It asserted that the universe was running down towards its final dissolution because its energy is being steadily, inexorably dissipated into the random motion of molecules, until it ends up as a single, amorphous bubble of gas with a uniform temperature just above absolute zero: cosmos dissolving into chaos. Only fairly recently did science begin to recover from the hypnotic effect of this gloomy vision, by realizing that the Second Law applies only in the special case of so-called “closed systems” (such as a gas enclosed in a perfectly insulated container), whereas all living organisms are “open systems” which maintain their complex structure and function by continuously drawing materials and energy from their environment [222 of 354] ...It was in fact a physicist, not a biologist, the Nobel laureate**

Erwin Schrödinger, who put an end to the tyranny of the Second Law with his celebrated dictum: “What an organism feeds on is negative entropy” [p.223] ...Schrödinger’s revolutionary concept of negentropy, published in 1944 [p.224] ...is a somewhat perverse way of referring to the power of living organisms to “build up” instead of running down, to create complex structures out of simpler elements, integrated patterns out of shapelessness, order out of disorder. The same irrepressible building-up tendency is manifested in the progress of evolution, the emergence of new levels of complexity in the organismic hierarchy and new methods of functional coordination [p.223] ...The origin of the concept dates back to Aristotle’s *entelechy*, the vital principle or function which turns mere substance into a living organism and at the same time strives towards perfection [p.224].’ Koestler spoke of ‘the active striving of living matter towards [order] [p.223]’, Of ‘a drive towards synthesis, towards growth, towards wholeness [p.224]’. He said that ‘the integrative tendency has the dual function of coordinating the constituent parts of a system in its existing state, and of generating new levels of organization in evolving hierarchies [p.225]’. (More was included earlier in Part 4:7 about Koestler’s acknowledgement of Integrative Meaning.)

Significantly, in terms of behaviour, Koestler observed that ‘the integrative tendency’ requires ‘coordination’; as I have emphasised, it requires that the parts of the new whole *cooperate*, behave selflessly, place the maintenance of the whole above the maintenance of themselves. A leaf falling from a tree in autumn does so in order for the tree to survive through winter and carry on. It puts the maintenance of the whole, namely the tree, above the maintenance of itself. The effective functioning of our body depends on the cooperation of all its parts, on every part doing what is best for the whole body. Our skin, for example, is constantly growing and dying to protect our body. Cancer cells, on the other hand, destroy the body precisely because they violate this principle and follow their own selfish, independent agenda. Indeed, as I have mentioned before, the very reason ant and bee societies work so well is because all the parts, the worker ants and bees, behave selflessly—they consider the welfare of the larger whole over their own welfare. Consider the honey bee—it gives its life in the defence of its colony when it stings a person, because once it has used its sting this type of bee dies.

Thus selflessness, specifically unconditional selflessness or altruism, is the glue that holds wholes together. It is the theme or meaning of existence. And since love means unconditional selflessness, love *is* the theme of existence—it *is* the meaning of life. The truthful, denial-free-thinker or prophet Christ emphasised the unconditionally selfless significance of the word ‘love’ when he said, ‘Greater love has no-one than this, that one lay down his life for his friends’ (John 15:13), and ‘if anyone wants to be first, he must be the very last, and the servant of all’ (Mark 9:35). Of the biblical references to love provided earlier, Colossians 3:14 perfectly summarises the integrative significance of love: ‘And over all these virtues put on love, which binds them all together in perfect unity.’ But, unfortunately, while virtually all the great truths, such as the unconditionally selfless nature of love, are acknowledged in the Bible, in our everyday, resigned world we couldn’t admit that love is unconditional selflessness until we could explain why humans don’t behave lovingly—why we are so selfish, competitive and aggressive when the meaning of existence is to be selfless, cooperative and loving. In fact, in the human-condition-avoiding mechanistic scientific paradigm it is considered improper, unscientific even, to use the word ‘love’—which again is a measure of just how deeply we humans have been living in denial. As mentioned in Part 4:7, the linguist Robin Allott

summarised mechanistic science's attitude to love when he said, **'Love has been described as a taboo subject, not serious, not appropriate for scientific study'** ('Evolutionary Aspects of Love and Empathy', *Journal of Social and Evolutionary Systems*, 1992, Vol.15, No.4 353-370). Indicative of this aversion is the fact that **'more than 100,000 scientific studies have been published on depression and schizophrenia (the negative aspects of human nature), but no more than a dozen good studies have been published on unselfish love'** (*Science & Theology News*, Feb. 2004). So mechanistic science has no interpretation of one of humanity's most used, valued and meaningful concepts! How extremely upset and therefore insecure have we humans been!

Indeed, in an address titled *The Nature of Love*, delivered by the American psychologist Harry F. Harlow in 1958 on his election as President of the American Psychological Association, Harlow made this opening observation: **'Psychologists, at least psychologists who write textbooks, not only show no interest in the origin and development of love or affection, but they seem to be unaware of its very existence. The apparent repression of love by modern psychologists stands in sharp contrast with the attitude taken by many famous and normal people. The word "love" has the highest reference frequency of any word cited in Bartlett's book of *Familiar Quotations*'** ('The nature of love', *American Psychologist*, 1958, Vol.13, No.12). In his 1989 book *Peacemaking Among Primates*, Frans de Waal recounts an anecdote from Harlow and his colleague Clara E. Mears that powerfully illustrates this discord: **'For some scientists it was hard to accept that monkeys may have feelings. In [the 1979 book] *The Human Model*...[authors] Harlow and Mears describe the following strained meeting: "Harlow used the term 'love', at which the psychiatrist present countered with the word 'proximity'. Harlow then shifted to the word 'affection', with the psychiatrist again countering with 'proximity'. Harlow started to simmer, but relented when he realized that the closest the psychiatrist had probably ever come to love was proximity.'"**

So, even as an undefined term, 'love' has been an unbearable concept for some, and yet 'love' or unconditional selflessness is only an *aspect* of Integrative Meaning, so how much more unbearable has the *overall* tenet of Integrative Meaning itself been? The answer is the Negative Entropy-driven integrative, cooperative, loving, selfless, order-developing theme or meaning or purpose of existence has been an almost completely unfrontable truth for the psychologically upset, competitive, aggressive and selfish human-condition-afflicted human race. In fact, we have lived in *such* fear of the truth of Integrative Meaning, lived in such terrified awe of it, been so confronted, condemned and intimidated by it, *so* unable to deal with it on any sort of an equal footing, that we termed it 'God'. Indeed, the integrative, cooperative, loving meaning of life has become deified as not just *a* God, but the one and *only* God—the most universal and fundamental, yet completely unfrontable, of truths.

Monotheism, the belief that there is only one God, is an insight that goes back as far as 4,000 years ago to two very great denial-free thinkers or prophets—the Hebrew prophet Abraham, who lived around 2,000 BC, and the pharaoh Akhenaton, who reigned in Egypt from approximately 1,350 to 1,335 BC. Around 360BC the denial-free-thinking prophet, Plato, also recognised that God is Integrative Meaning, writing that **'God desired that all things should be good and nothing bad, so far as this was attainable. Wherefore also finding the whole visible sphere not at rest, but moving in an irregular and disorderly fashion, out of disorder he brought order, considering that this was in every way better than the other'** (*Timaeus*, tr. Benjamin Jowett, 1877).

But *until* we could explain why we humans have been divisive and not integrative, until we could explain the human condition and explain in first-principle-based, scientific terms who, or more precisely, what God is—namely our personification of the Negative Entropy-driven integrative theme, purpose and meaning of life—we had no choice but to leave the religious concept of God in a safely abstract, undefined state. And so despite the truth of Integrative Meaning being *extremely* obvious, with evidence of the hierarchy of the order of matter everywhere we look, prior to finding understanding of our condition it was both important and necessary for humanity that human-condition-avoiding mechanistic science found a way to deny such a seemingly totally condemning truth. This was easily achieved through the simple assertion that there is no meaning or purpose or theme in existence and that while change *does* occur, it is a random, purposeless, directionless, meaningless, blind process. And, as stated, to cope with the imbued recognition of integrative ideality and meaning in the religious concept of ‘God’, science simply left the concept of ‘God’ undefined, maintaining it was a strictly abstract, metaphysical and spiritual notion unrelated to the scientific domain—just an inexplicable and undefinable deity seated on a throne somewhere high above the clouds in a remote blue heaven who can be worshipped from afar as someone superior to us while avoiding any direct comparisons with ourselves. Religion and science were firmly demarcated as two entirely unrelated subjects. As the leading mechanistic biologist, E.O. Wilson, has said, **‘I take a very strong stance against the mingling of religion and science’** (*National Geographic* mag. May 2006).

But as stated in Part 4:12, the truth of the matter is, to use Nobel Prize-winning physicist Charles H. Townes’ words, **‘they [religion and science] both represent man’s efforts to understand his universe and must ultimately be dealing with the same substance. As we understand more in each realm, the two must grow together...converge they must’** (*The Convergence of Science and Religion*, *Zygon*, Vol.1 No.3, 1966). And with understanding of the human condition now found, **‘converge’** they have. Ideality, which religion and the truthful, denial-free-thinking, God-confronting-not-avoiding, unresigned prophet it was founded around represented, and our search for understanding of our non-ideal reality, which science (the word ‘science’ literally means ‘knowledge’) represented, have finally been reconciled. Yes, with the human condition now explained and our divisive, seemingly non-integrative state finally understood, *all* humans can at last safely admit and recognise that there has only been one ‘God’, one all-dominating and all-pervading universal truth, which is Integrative Meaning. Yes, integration and the selflessness or love that enables it to occur *is* the theme of existence, is ‘God’—a truth we recognise when we say **‘God is love’** (1 John 4:8, 16).

And remarkably, despite the fact that the admittance of Integrative Meaning first required solving the issue of our divisive human condition, a rare few holistic scientists have courageously defied the almost universal need to deny the development of order of matter on Earth, or Integrative Meaning, and acknowledge that it is what we mean by ‘God’. If we include more of what Hawking and Einstein said earlier about order being the main characteristic of change in the universe, we can see that they both regarded ‘God’ as the personification of Integrative Meaning. In 1989 Hawking said, **‘I would use the term God as the embodiment of the laws of physics’** (*Master of the Universe*, BBC, 1989). In 2002 he went further when,

in an article titled *The Time of His Life* (*Sydney Morning Herald*, 28 Apr. 2002), Gregory Benford, a professor of physics at the University of California, chronicled a meeting he held with Hawking, in which Hawking elaborated on this observation about God being the laws of physics. Benford reported that in the course of discussion he had commented that **‘there is amazing structure we can see from inside [the universe]’**, to which Hawking agreed, saying, **‘The overwhelming impression is of order. The more we discover about the universe, the more we find that it is governed by rational laws. If one liked, one could say that this order was the work of God. Einstein thought so...We could call order by the name of God.’** The 1997 PBS documentary *Einstein Revealed* reported Einstein as saying that **‘over time, I have come to realise that behind everything is an order that we glimpse only indirectly [because it’s unbearably condemning]. This is religiousness. In this sense, I am a religious man.’** Yes, this ‘order’ is apparent everywhere and it is what our ‘religiousness’, our belief in ‘God’, is concerned with acknowledging.

The Templeton Prize-winning physicist Paul Davies is another leading scientist who has acknowledged that ‘God’ is Integrative Meaning. In his 1995 acceptance speech for the Templeton Prize (at approximately US\$1.5 million, a financially rewarding honour that is given for the bold objective of **‘increasing man’s understanding of God’** [*The Templeton Prize*, Vol.3, 1988-1992, p.108 of 153]) Davies said, **‘So where is God in this story [of physics]? Not especially in the big bang...To me, the true miracle of nature is to be found in the ingenious and unswerving lawfulness of the cosmos, a lawfulness that permits complex order to emerge from the chaos...It points forcefully to a deeper underlying meaning to existence. Some call it purpose, some design’** (‘Physics and the Mind of God: The Templeton Prize Address’, 3 May 1995). On other occasions Davies has also said that **‘these laws of physics are the correct place to look for God or meaning or purpose’** (‘God Only Knows’, *Compass*, ABC-TV, 23 Mar. 1997), and **‘humans came about as a result of the underlying laws of physics’** (*Paul Davies—More Big Questions: Are We Alone in the Universe?*, SBS-TV, 1999). Further, in his 1987 book *The Cosmic Blueprint*, Davies actually went so far as to protest against the denial of Integrative Meaning in the world of science: **‘We seem to be on the verge of discovering not only wholly new laws of nature, but ways of thinking about nature that depart radically from traditional science...Way back in the primeval phase of the universe, gravity triggered a cascade of self-organizing processes—organization begets organization—that led, step by step, to the conscious individuals who now contemplate the history of the cosmos and wonder what it all means...There exists alongside the entropy arrow another arrow of time [the Negative Entropy arrow], equally fundamental and no less subtle in nature...I refer to the fact that the universe is *progressing*—through the steady growth of structure, organization and complexity—to ever more developed and elaborate states of matter and energy. This unidirectional advance we might call the optimistic arrow, as opposed to the pessimistic arrow of the second law...There has been a tendency for scientists to simply deny the existence of the optimistic arrow. One wonders why’** (ch.10, 9 & 2 respectively). The reason ‘why’ ‘scientists’ ‘deny’ ‘the optimistic arrow’ of Integrative Meaning is because it was far too psychologically dangerous to acknowledge without first finding the biological reason for our divisive, apparently non-integrative, ‘un-Godly’ human condition.

But again, while our earliest unresigned, denial-free thinking, truthful prophets and a brave few holistic scientists *have* admitted that God is Integrative Meaning, it is only now with understanding of the human condition found that humanity as a whole can afford to demystify the concept of God, explain what we mean by ‘God’, and bring understanding to our relationship (or our lack thereof) with ‘God’. On the face of it, Integrative Meaning

implied that we humans were out-of-step with creation—at odds with God no less—seemingly bad, unworthy, guilty, sinful, defiling, even evil beings, so it is no wonder we have been, as we say, a ‘God-fearing’, in fact, God-revering to the point of being God-worshipping—not a ‘God-confronting’—species; as Nikolai Berdyaev put it, **‘He [man] cannot [struggles to] break through to paradise that lies beyond the painful distinction between good and evil, and the suffering connected therewith. Man’s fear of God is his fear of himself, of the yawning abyss of non-being [alienation] in his own nature’** (*The Destiny of Man*, 1931, tr. N. Duddington, 1960, p.41 of 310).

When I was assembling my ideas about the human condition I took my emerging synthesis to the biologist Ronald Strahan for feedback. Ron, who was head of Sydney’s Taronga Zoo at the time, had helped and encouraged me during my search for the Tasmanian Tiger. After a number of visits to Ron to discuss the synthesis he eventually told me, **‘Jeremy, I can’t keep reading this material you are sending me. Don’t you understand I am a God-fearing person’** (29 Dec. 1982). I remember Ron turning around to walk back into his house and his wife, who had been standing beside him, looking me straight in the eye and saying words to the effect: **‘Jeremy, you can’t keep sending your writings to Ron because he just can’t cope with what you are writing about, please stop.’** When Ron said he was **‘God-fearing’** he was acknowledging that he couldn’t confront the truth of Integrative Meaning and all the other truths I had been writing about that follow from it. He was being extraordinarily honest because it is very hard for humans to betray themselves, for to admit you are living in denial is to completely undermine that protective denial.

As has been mentioned before, in approximately 360BC Plato wrote what many consider to be his greatest work, *The Republic*, central to which is the allegory of a cave in which humans are imprisoned, chained together and able only to envisage the outside world via shadows cast on the back wall of the cave. These shadows, which symbolise our limited and distorted, human-condition-avoiding, dishonest, immensely alienated view of the world, are thrown by the light of a fire that, situated in the entrance to the cave, effectively prevents any escape from it. Explaining the symbolism of the fire, Plato wrote that **‘the light of the brightly burning fire in the [cave] prison corresponds to the power of the sun [p.282 of 405]’**, and explained that the sun represents the **‘universal, self-sufficient first principle [p.277]’**, the **‘absolute form of Good [p.282]’** and the **‘highest form of knowledge [p.268]’**, and that **‘if he [a prisoner in the cave] were made to look directly at the light of the fire, it would hurt his eyes and he would turn back [p.280]’** (from H.D.P. Lee’s 1955 translation of *The Republic*). We can now understand that Plato’s **‘universal, self-sufficient first principle’**, the **‘absolute form of Good’** and the **‘highest form of knowledge’** is Integrative Meaning, the truth that so condemns humans that we have had to live in denial of it—metaphorically speaking, in a dark cave, hidden from the scrutiny of its scorching glare.

Fire appears in many mythologies as a metaphor for the integrative ideals of life, the condemning implications of which prevented our ‘escape’ from our restricted, chained-up, alienated condition. In the Zoroastrian religion, **‘Fire is the representative of God...His physical manifestation...Fire is bright, always points upward, is always pure’** (*Eastern Definitions*, Edward Rice, 1978, p.138 of 433). In Christian mythology, the story of Genesis features **‘a flaming sword flashing back and forth to guard the way to the tree of life’** (Gen. 3:24). In an acknowledgment of how suicidally confronting and depressing the truth of Integrative Meaning can be for humans, the Bible also records the Israelites as saying, **‘Let us not hear the voice of the Lord our God nor see this great fire**

any more, or we will die' (Deut. 18:16). And in another biblical account, Job pleaded for relief from confrontation with the unbearably depressing integrative, Godly ideals when he lamented, **'Why then did you [God] bring me out of the womb?...Turn away from me so I can have a moment's joy before I go to the place of no return, to the land of gloom and deep shadow, to the land of deepest night [depression]'** (Job 10:18, 20-22). Job's **'land of gloom and deep shadow...land of deepest night'**, the state of deepest and darkest depression that resulted from trying to confront the issue of the human condition, equates perfectly with life in Plato's cave. Humans could only avoid the terrible depression by turning from the 'sun'/'fire', by living psychologically in denial of the truth of Integrative Meaning and all the truths that related to it. Christ was another who understood the problem of the exposing **'light'** of truth—which he, in his necessarily sheltered-from-exposure-to-the-human-condition-childhood, fully-loved-and-nurtured, relatively innocent, denial-and-therefore-alienation-free, sound state, also represented—when he said, **'the light shines in the darkness but...everyone who does evil [becomes upset sufferers of the human condition] hates the light, and will not come into the light for fear that his deeds will be exposed'** (John 1:5, 3:20).

So again, while Integrative Meaning is one of the most obvious, profound and thus important of all truths it is clearly also the truth that has appeared to most condemn humans, and which humans have therefore most feared and found most difficult to confront and accept. We humans have sensibly avoided the subjective dimension to life, the issue of 'self'. Instead of hopelessly and dangerously trying to confront the issue of our non-ideal, corrupted human condition we have sensibly taken one of two options: we either practiced denial of Integrative Meaning, and even of God, and thus of the issue of our self-corruption, or we indirectly acknowledged our self-corruption by acknowledging the existence of God and embracing some expression of faith that a greater dignifying understanding of our divisive condition does exist and would one day be found. To cope with our less-than-ideal human condition there has only ever been either denial or faith. Understanding just how insecure we humans have been in the presence of the integrative ideals or God allows us to understand and thus demystify the origins of the religious impulse. (This subject of the origin of religion was looked at in some detail in Part 3:11G.)

Indeed, in his acceptance speech for the Templeton Prize, Paul Davies also made this comment about the demystification of the religious concept of God: **'Yet among the general population there is a widespread belief that science and theology are forever at loggerheads, that every scientific discovery pushes God further and further out of the picture. It is clear that many religious people still cling to an image of a God-of-the-gaps, a cosmic magician invoked to explain all those mysteries about nature that currently have the scientists stumped. It is a dangerous position, for as science advances, so the God-of-the-gaps retreats, perhaps to be pushed off the edge of space and time altogether, and into redundancy.'** In truth, until understanding of the human condition was found the truly **'dangerous position'** was to demystify God and eliminate the ability for people to **'cling to an image of a God-of-the-gaps'**. The fact is, understanding that God is Integrative Meaning is not something that has **'stumped'** scientists, rather it is something that all humans intuitively know but have almost universally had to conscientiously practice denying. Davies acknowledged this resistance when he said, **'A lot of people are hostile to science because it demystifies nature. They prefer the mystery. They would rather live in ignorance of the way the world works and our place within it'** (ibid). Yes, until the human condition was explained people weren't able to face the truth of Integrative Meaning.

Our ability now to appreciate how important our denial of Integrative Meaning has been means we can finally understand why it has been so important for science to avoid demystifying the concept of God. For instance, the final episode of *Evolution* (a TV series co-produced by WGBH/NOVA Science Unit and Clear Blue Sky Productions in 2001) examined the controversy in American schools and universities over the teaching of Charles Darwin's concept of 'natural selection' as a Godless, meaningless, blind process. The episode's title, 'What about God?', asked why God is excluded from science's interpretation of existence. The answer is that direct acknowledgment of Integrative Meaning was excluded for humans' own sake, for it saved us from suicidal depression. Ensuring the concept of God remained abstract and undefined in scientific terms saved us from direct confrontation with the truth of Integrative Meaning, a confrontation we could not survive until understanding of the human condition was found.

We can also understand now that what supporters of 'Creationism' and 'Intelligent Design' were attempting to do was introduce the concept of God into science, but in a way that didn't involve having to admit to Integrative Meaning and, by so doing, have to confront the suicidally depressing issue of the human condition. They were trying to counter the extreme dishonesty of Integrative Meaning/God-denying mechanistic science with their own form of dishonesty that treated God in a fundamentalist way in which God took the form of an actual being who 'designed' life on Earth, or 'created' the world in just six days. Of course, both positions were immensely dishonest, as they had to be because without understanding of the human condition it was too psychologically dangerous to confront the truth of Integrative Meaning. The difference, however, was that mechanistic scientists wanted to pretend to be rational and either deny any semblance of Integrative Meaning by refuting the existence of the concept of God, or acknowledge the concept of God but claim it has nothing to do with science, while supporters of Creationism and Intelligent Design chose to admit to a semblance of Integrative Meaning in the form of a God who is literally a special person or being or deity who lives in a remote blue heaven surrounded by people with wings, with the downside being that such a stance necessarily meant abandoning all attempts at rationality. (Again, the role of religions and the reason they became more and more simplistic/literalist/fundamentalist was explained earlier when the ever increasing levels of alienation in society was explained in Parts 3:11G and 3:11H.)

We can see that the *real* issue that neither party was willing or able to acknowledge is the issue of Integrative Meaning and its human-condition-confronting implications. And so, in an attempt to keep the issue even further at bay, mechanistic science has, in recent years, evasively shifted its focus away from Integrative Meaning onto the tangential topic of whether the concept of God has been destroyed by science's ability to explain the origins of the universe; of whether physicists' discoveries about the Big Bang origin of the universe, the extinction of time before the Big Bang and, more recently, the possibility of multiple universes (and the search for an ultimate understanding of the cosmos continues), have undermined the concept of God! In other words, can we now understand the origins of the universe without invoking the involvement of a divine agent, someone 'twiddling the dials'? This debate has stalled, however, because the more physicists discover, the more they realise there is to discover. They are unable to give a logical and rational explanation for everything,

such as how did the laws that govern the universe come into being in the first place. As emphasised, this debate has failed to acknowledge the involvement of the issue of the human condition—the existence within our species of a collective, shared-by-all psychosis that is resisting recognition of the existence of meaning and purpose in our existing world and the demystification of the concept of God that that makes possible. As will be explained shortly when the development of order of matter is explained, the truth is that, starting with the boundaries of our reality of matter, space and time, and drawing on the laws of physics with which we live, we can construct the human condition, and also solve it—and, by so doing, make it possible to demystify God, and, indeed, bring to an end the whole debate about ‘His’ existence. Paul Davies was right when, as mentioned earlier, he said, **‘So where is God in this story? Not especially in the big bang...To me, the true miracle of nature is to be found in the ingenious and unswerving lawfulness of the cosmos, a lawfulness that permits complex order to emerge from the chaos.’**

And so, the upset human race has been ‘God-fearing’ not ‘God-confronting’, to the extent that God was left un-demystified as a great truth ‘out there’ that was deemed impossible to confront. The real issue in the debate about the validity of Creationism and Intelligent Design is the issue of the human condition, our inability to confront truths that are condemning until we can explain the human condition. Creationists and supporters of Intelligent Design recognised that mechanistic science was denying a great truth about our world, which they wanted to stop, but they were not recognising that in order to stop the denial the human condition had to be confronted and explained. Creationists and supporters of Intelligent Design tried to counter the denial of Integrative Meaning in mechanistic science with dogma; they wanted the abstract concept of God to be taught in schools, but science—indeed all education—is about demystifying abstract concepts. Again, the word ‘science’ actually means ‘knowledge’. If they were serious about ending the dishonesty of mechanistic science they should have started looking into the issue of the human condition and tried to explain it, but that was typically the last option they wanted to take. After all, they were advocates of dogma not knowledge, but dogma got us nowhere. The whole Creationism and Intelligent Design debate, like the whole scientific debate about whether God has been destroyed by science’s ability to explain the origins of the universe, was a fraud, a distraction from the real issue of the human condition that no one was prepared to talk about.

Only now that we can understand the human condition is it at last psychologically safe to demystify God—and, by doing so, reconcile religion and science; as the scientist-philosopher and denial-free thinking prophet Pierre Teilhard de Chardin recognised, **‘I can see a direction and a line of progress for life, a line and a direction which are in fact so well marked that I am convinced their reality will be universally admitted by the science of tomorrow’** (*The Phenomenon of Man*, 1938, p.142 of 320). Mechanistic science couldn’t admit to Integrative Meaning because it was a suicidally depressing truth, but now that the human condition has been explained the **‘so well marked’** truth of the integrative meaning of existence can at last be safely **‘admitted’**.

It should, at this point, be emphasised that the integrative, holistic, teleological meaning or purpose or design in nature is simply a product of possibilities. The differing properties of matter mean that some arrangements of matter break down towards heat energy, while others stay stable and still others become part of *larger* stable associations of matter. In time, all the possible associations of matter will be automatically investigated until the largest stable

association is naturally found. Standing back and observing this process we can say that what happens overall is that larger and more stable wholes of matter develop. There *is* a grand theme or design or purpose or meaning to what is occurring, which is the development of ever larger and more stable wholes. But this doesn't mean that there is some over-viewing, guiding hand managing and directing this process; no 'God' or 'Intelligent Designer' in the sense of some agent 'overseeing' our world. The term 'teleonomy' has been used by some scientists to recognise the apparent purposefulness and goal-directedness of the integrative process without invoking the misinterpretation of teleology that some might make that infers the benefit or involvement of some intangible guiding foresight.

The problem with the concept of 'teleonomy' was that while it avoided the misinterpretation that there is some over-viewing, guiding hand managing and directing life, its admission of Integrative Meaning left humans unbearably condemned for being divisively behaved. As has been emphasised, the responsible sequence of events was to firstly explain the human condition, explain the reason why humans have had to be divisively behaved, and *only then* admit the truth of the holistic, teleological, integrative meaning of existence. But as illustrated by the aforementioned statements from Paul Davies, a few scientists *have* jumped the gun and admitted to Integrative Meaning before the human condition was explained—and not surprisingly, their work *has* met with much resistance from the mechanistic scientific establishment. Indeed, the Australian journalist Deidre Macken wrote an article titled 'Science Friction' about those scientists who have dared to recognise order/complexity/teleology/holism/purpose/meaning and the hostility they encountered as a result. In the article, Macken wrote of a '**scientific revolution**' and a coming '**monumental paradigm shift**', reporting that the few scientists who have '**dared to take a holistic approach**' are seen by the scientific orthodoxy as committing '**scientific heresy**'. She went on to write that scientists taking the '**holistic approach**', including the scientists '**physicist Paul Davies and biologist Charles Birch**' (as has been mentioned, Birch was my biology professor at Sydney University), are trying '**to cross the great divide between science and religion**', and are '**not afraid of terms such as "purpose" and "meaning"**', adding that '**Quite a number of biologists got upset [about this new development] because they don't want to open the gates to teleology—the idea that there is goal-directed change is an anathema to biologists who believe [evade the condemning truth of Integrative Meaning by saying] that change is random... The emerging clash of scientific thought has forced many of the new scientists on to the fringe. Some of the pioneers no longer have university positions, many publish their theories in popular books rather than journals, others have their work sponsored by independent organisations... Universities are not catering for the new paradigm**' (*Good Weekend mag. Sydney Morning Herald*, 16 Nov. 1991).

These scientists who '**dared to take a holistic approach**' were committing a very profound '**heresy**' indeed because they were defying the human race's need to deny Integrative Meaning until the human condition was explained. The *real* '**scientific revolution**' and coming '**monumental paradigm shift**' when '**the great divide between science and religion**' is '**cross[ed]**' occurs when understanding of the human condition is found, as it now is, because *only then* does it become safe to admit Integrative Meaning.

I might add that in addition to Hawking, Einstein, Koestler, Davies and Birch, there have actually been quite a few scientists who have 'jumped the gun', admitted Integrative Meaning before the human condition had been explained, which the titles (particularly the words I have

underlined) of the following books illustrate (Davies' and Birch's works are also included in this list): Professor John Morton wrote *Man, Science and God* in 1971 and *Redeeming Creation* in 1984; Professor David Bohm wrote *Wholeness and The Implicate Order* in 1980; Professors Ilya Prigogine and Isabelle Stengers wrote *Order Out of Chaos* in 1984; Professor Paul Davies wrote *God and the New Physics* in 1983, *The Cosmic Blueprint* in 1987 and *The Mind of God: Science and the Search for Ultimate Meaning* in 1992; Professor Charles Birch wrote *Nature and God* in 1965, *On Purpose* in 1990 and *Biology and The Riddle of Life* in 1999; Dr M. Mitchell Waldrop wrote *Complexity: The Emerging Science at the Edge of Order and Chaos* in 1992; Roger Lewin wrote *Complexity: Life at the Edge of Chaos, the major new theory that unifies all sciences* in 1993; Professor Stuart Kauffman wrote *The Origins of Order: Self-Organization and Selection in Evolution* in 1993, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity* in 1995 and *Anti-chaos* in 1996; and Dr Richard J. Bird wrote *Chaos and Life: Complexity and Order in Evolution and Thought* in 2003. The terms 'wholeness', 'order', 'self-organisation' and 'complexity' used in these titles are all aspects of the purposeful, meaningful, goal-directed, holistic, teleological, Godly, integrative theme of existence.

As emphasised in Part 4:4B, coming off such a fundamentally false base as mechanistic science has been, by maintaining that change is 'random', that there is no meaning or purpose in existence, that there is no direction or goal—by denying such a fundamental truth as Integrative Meaning no less—has meant its ability to interpret its own findings has been deeply compromised, which is why it has struggled to make much sense of the real nature of life on Earth, in particular make sense of human nature. In fact, denial-complying mechanistic science has been such a superficial and thus ineffective form of enquiry that there is a world-wide loss of faith in science. The American General Omar Bradley, who rose to eminence during the Second World War, highlighted the extreme deficiency of mechanistic science when he said, **'The world has achieved brilliance...without conscience. Ours is a world of nuclear giants and ethical infants'** (Armistice Day Address, 10 Nov. 1948, *Collected Writings of General Omar N. Bradley*, Vol.1). Carl Jung recognised science's failure to enlighten us about ourselves when he said that **'Man everywhere is dangerously unaware of himself. We really know nothing about the nature of man, and unless we hurry to get to know ourselves we are in dangerous trouble'** (*Jung and the Story of Our Time*, Laurens van der Post, 1976, p.239 of 275). Charles Birch spoke the truth when he said, **'[mechanistic] science can't deal with subjectivity...what we were all taught in universities is pretty much a dead end'**. Mechanistic science hasn't been able to deal with the truth about ourselves and our world, something Paul Davies certainly identified when he said, **'For 300 years science has been dominated by extremely mechanistic thinking. According to this view of the world all physical systems are regarded as basically machines...I have little doubt that much of the alienation and demoralisation that people feel in our so-called scientific age stems from the bleak sterility of mechanistic thought'** ('Living in a non-material world—the new scientific consciousness', *The Australian*, 9 Oct. 1991). The Russian philosopher Nikolai Berdyaev also recognised the problem of alienation from meaning in mechanistic science when, in an aforementioned quote, he wrote that **'Philosophy...regards him [man] as belonging to the kingdom of the spirit, while science studies man...as an object...Nothing that is an object...has meaning...The only way radically to distinguish between philosophy and science is to admit that philosophy is...knowledge of meaning**

and participation in meaning. Science and scientific foresight give man power and security, but they can also devastate his consciousness and sever him from reality. Indeed it might be said that science is based upon the alienation of man from reality and of reality from man...The historical method which...objectifies ideas, regarding them entirely from outside...[means that] the discovery of meaning becomes impossible. It is the enslavement of philosophy by science—scientific terrorism' (*The Destiny of Man*, 1931, tr. N. Duddington, 1960, p.6-7 of 310).

Plato recognised the consequences of denial of such fundamental truths as Integrative Meaning when he wrote that **'the Good [Integrative Meaning]...gives the objects of knowledge their truth and the mind the power of knowing...[just as] the sun...makes the things we see visible... The Good therefore may be said to be the source not only of the intelligibility of the objects of knowledge, but also of their existence and reality'** (*Plato The Republic*, tr. H.D.P. Lee, 1955, p.273). Plato also said that **'when the soul [our integratively orientated original instinctual self] uses the instrumentality of the body [uses the body's intellect with its preoccupation with denial] for any inquiry...it is drawn away by the body into the realm of the variable, and loses its way and becomes confused and dizzy, as though it were fuddled [drunk]...But when it investigates by itself [free of human-condition-avoiding, intellectual denial], it passes into the realm of the pure and everlasting and immortal and changeless, and being of a kindred nature, when it is once independent and free from interference, consorts with it always and strays no longer, but remains, in that realm of the absolute [Integrative Meaning], constant and invariable'** (*Phaedo*, tr. H. Tredennick). Plato also referred to the need to be able **'to look straight at reality'** if we are to effectively **'learn'** when he wrote, **'this capacity [of a mind...to see clearly] is innate in each man's mind [we are born with a truthful, instinctive orientation to the cooperative, loving, integrative meaning of existence], and that the faculty by which he learns is like an eye which cannot be turned from darkness to light unless the whole body is turned; in the same way the mind as a whole must be turned away from the world of change until it can bear to look straight at reality, and at the brightest of all realities which is what we call the Good [Integrative Meaning or God]'** (*The Republic*, tr. H.D.P. Lee, 1955, p.283 of 405).

This loss of **'the power of knowing'** has been very serious. Mechanistic science has suffered very greatly from an inability to think truthfully and thus effectively, it certainly has, as Plato said, **'los[t] its way and become confused and dizzy, as though it were fuddled [drunk]'**. Indeed, Arthur Koestler bemoaned the **'fuddled'**, stalled situation of all of science, but of biology and psychology in particular, when he said that the human-condition-issue-avoiding, Integrative-Meaning/God-shunning, whole-view-evading, details-only-focused, blind, reductionist, mechanistic science's denial of Integrative Meaning has **'taken the life out of biology as well as psychology'**, writing that **'although the facts [of the integration of matter] were there for everyone to see, orthodox evolutionists were reluctant to accept their theoretical implications. The idea that living organisms, in contrast to machines, were primarily active, and not merely reactive; that instead of passively adapting to their environment they were...creating...new patterns of structure...such ideas were profoundly distasteful to [Social] Darwinians, behaviourists and reductionists in general [p.222 of 354] ... Evolution has been compared to a journey from an unknown origin towards an unknown destination, a sailing along a vast ocean; but we can at least chart the route ...and there is no denying that there is a wind which makes the sails move...the purposiveness of all vital processes...Causality and finality are complementary principles in the sciences of life; if you take out finality and purpose you have taken the life out of biology as well as psychology [p.226]'** (*Janus: A Summing Up*, 1978).

Towards the end of his momentous book *The Origin of Species by Means of Natural Selection*, Charles Darwin anticipated that **‘In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation...Light will be thrown on the origin of man and his history’** (1859, p.458 of 477). Given Koestler’s comment that **‘if you take out finality and [integrative] purpose you have taken the life out of biology as well as psychology’**, what was required to bring about Darwin’s **‘new’ en-‘light’-ening ‘foundation’** for **‘far more important research’** in **‘biology as well as psychology’** was acknowledgment of **‘integrative’ ‘purpose’**. As Arthur Schopenhauer pointed out, **‘The discovery of truth is prevented most effectively...by prejudice, which...stands in the path of truth and is then like a contrary wind driving a ship away from land’** (*Essays and Aphorisms*, tr. R.J. Hollingdale, 1970, p.120 of 237). This **‘prejudice’**, **‘contrary wind’** that has been **‘driving’** biologists away from insight into the nature of our world and our place in it is the practice of, as Koestler described it, **‘denying that there is a wind which makes’** matter integrate, **‘the purposiveness of all vital processes’**.

So yes, we were never going to get to the liberating truth about the crux problem facing our species of the human condition using lies, most especially denial of Integrative Meaning. When Charles Birch said, **‘what we were all taught in universities is pretty much a dead end’**, he was prescient in his choice of words, because **‘dead end’** is an apt description for the stalled state of science today, in particular of the stalled state of that discipline within science of biology. In fact, he also once said that **‘Biology has not made any real advance since Darwin’** (In recorded conversation with this author, 20 Mar. 1987). Birch also summarised the overall situation faced by mechanistic science when he said that **‘the traditional framework of thinking in science is not adequate for solving the really hard problems’** (ABC Radio National, *Ockham’s Razor*, 16 Apr. 1997). Well, the **‘hard[est] problem’** of all for denial-complying mechanistic science to solve has been the all-important issue of the human condition.

Science, which, as mentioned, literally means knowledge, has been *so* deeply committed to denial that it has been failing in its responsibility to find knowledge, ultimately self-knowledge, understanding of the human condition no less—indeed, it has been failing in its responsibility to even assist or encourage those engaged in this all-important realm of enquiry. Not only has my work of studying the human condition been resisted by conventional science, it has very often been ruthlessly attacked by those sympathetic to maintaining all the denial in science. There has been an all-out effort to destroy my work—and me. It is a very serious situation that I am only just still on my feet and working to bring liberating understanding to the all-important issue of the human condition. In her article, Macken wrote that **‘many [holistic scientists have had to] publish their theories in popular books rather than journals, others have their work sponsored by independent organisations’**. I had to found an organisation that could nurture and support enquiry into the human condition. We in the WTM, who are dedicated to bringing understanding and amelioration to the all-important issue facing the human race of the human condition, have had no assistance at all from the establishment, quite the contrary—we have been viciously attacked by it. In contrast, mechanistic scientists are paid by universities and given access to all manner of facilities, support and encouragement. Sadly, history shows that the present doesn’t just resist the future, it actively despises it.

The physicist Max Planck succinctly described this resistance between old science and new science when he wrote that **‘science progresses funeral by funeral’** (see his *Scientific Autobiography*,

1948)—a sentiment shared by the science historian Thomas Kuhn who said that **‘the old scientists who became established within the dominant paradigm have to die off first: they will virtually never accept the new paradigm. Only the younger generation of scientists, who don’t have the emotional attachment to the old paradigm, will be willing to change their minds’** (a reference to the work of Kuhn by Marilyn Ferguson, *New Age* mag. Aug. 1982). Schopenhauer summarised the journey that new ideas in science have historically had to undergo when he famously said that **‘the reception of any successful new scientific hypothesis goes through predictable phases before being accepted’**. First, **‘it is ridiculed’** and **‘violently opposed’**. Second, after support has begun to accumulate, **‘it is stated that it may be true but it’s not particularly relevant’**. Third, **‘after it has clearly influenced the field it is admitted to be true and relevant but the same critics assert that the idea is not original’**. Finally, **‘it is accepted as being self-evident’** (compiled from two references to Schopenhauer’s work—*New Scientist*, 15 Nov. 1984 & *PlanetHood*, Ferencz & Keyes, 1988). Note that each stage of recognition is achieved in a way that protects the ego of the onlookers. The extent of insecurity in the human make-up is very apparent.

Relievingly, with understanding of the human condition now found, religion and science, faith and reason, the abstract acknowledgment of the ideal truths and our first principle-based enquiry into reality, are finally reconciled. Indeed, ‘God’ and man are finally reconciled—de Chardin’s **‘omega point’** has been reached!

Part 8:2 The history of the development of order of matter on Earth

I have said that prior to becoming fully conscious and before the upset state of the human condition emerged, we humans lived in a completely cooperative, harmonious, loving, unconditionally selfless, fully integrated state—which raises the question: how could a gene-based learning system develop such unconditionally selfless, altruistic traits given that unconditionally selfless traits self-eliminate and so, it would follow, can’t become established genetically?

To answer this question it is necessary to firstly look truthfully at the history of the development of order of matter on Earth. As was pointed out towards the end of the previous Part 8:1, Darwin anticipated that **‘In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation...Light will be thrown on the origin of man and his history’**, and given Koestler’s comment that **‘if you take out finality and [integrative] purpose you have taken the life out of biology as well as psychology’**, what was required to bring about Darwin’s **‘new’** en-**‘light’**-ening **‘foundation’** for **‘far more important research’** in **‘biology as well as psychology’** was acknowledgment of **‘integrative’ ‘purpose’**. So, to end the current crippled, atrophied, stalled state of biological thinking requires putting aside all the denial-distorted thinking that so saturates biological dialogue and texts up until now, and, starting from the **‘new foundation’** of the acceptance of the purpose of developing the order of matter, think simply, cleanly and freshly through the whole biological story from its beginning. We need to assume Integrative Meaning and examine the fundamental ingredients of our world and follow where the process of integration takes us.

Firstly we need to replace the word ‘evolution’ with the word ‘development’. Evolution implies that organisms do change or evolve but avoids acknowledging that there is a direction and purpose to that change, which is to *develop* the order of matter.