

## SCIENCE THE NEW GOD – THE SEQUEL



### The Newton Factor

Newton is arguably the greatest of all the scientific figures, for somehow, he seemed to see what it all meant (the big picture), as he brought together all that had gone before him. He extended beyond the reach of the new knowledge into infinity, which brought about the refining of all human knowledge. His greatness arises from the fact that he was never simply a scientist, his mind worked on the borders between all forms of human knowledge such as, magic and science, alchemy and physics, mathematics, and God. Our age is diminished by the fact that we chose only one part of Newton's legacy, the part we now call science, but which he called philosophy. Galileo observed, analysed, and saw the cultural-religious crisis he had precipitated with amazing clarity. But Newton actually imagined and described such a universal system that even today the accuracy of so much that he conceived is still relevant.

Observation and theory had provided the beginning of the 'new order'; Galileo could be described as the match, but Newton was to become the fuel. His work around gravity and the laws of motion, time and space were to completely revolutionise the way we looked at and understood reality. He took the work of Copernicus and Kepler to a whole new level, introducing velocity and gravity to the orbits of the planets, and therefore redefining our understanding of the universe. His system (and the mathematics he invented to describe it), is one of the greatest achievements of human imagination. And even though our current understanding of quantum physics has exposed cracks and imperfections in the Newtonian laws, the fact remains we owe Sir Isaac Newton a great debt.

It is a shame that his metaphysical approach to life has not left its mark in the same way. It is worth noting that Newton did not see science as merely a series of observations. For him, speculation borne of imagination took precedence over experiment and observation. An excellent example of imagination triumphing over experimentation was when Newton was vindicated by Edmund Halley who, in 1758, had used Newtonian mathematics to predict the period of a comet (Halley's Comet), which was seventy-five and half years. He was precisely right, and an awe-struck world could see

the human mind had encompassed the future by explaining the heavens. Beneath the revolutionary mathematics of both Galileo and Newton lies a beautiful simplicity. They both worked on the underlying premise that nature was efficient, which was also an Aristotelian idea, that nature did nothing in vain, nothing was superfluous.

That concept was also understood and further explained by Albert Einstein (1879-1955) two hundred and fifty years later. The idea of a simple universal order with nature (matter) seeming at times chaotic but having a 'heartbeat' of simplicity as the driving force behind all events, is something that builds a bridge between Newton and, in our time, Einstein. Einstein was described in 1999 as 'the' person of the 20th century. His contributions are staggering and include photon theory, thermodynamic properties of light, the unified field theory and of course relativity. The wonderful work of Einstein was busy defending the idea of classical physics against what seemed to him to be the new and misguided developments of the 20th century. Newton was doing a similar thing in his own time.

He appeared to be contradictory because he spoke about the certainty of a world based on observation and experimentation and yet he embraced the seemingly 'magical' world of alchemy and astrology too. For him there was no contradiction. Like Shakespeare before him he spoke with many voices. He was described by John Maynard Keynes, the British economist, as "the first of the age of reason and the last of the magicians, the last great mind, which looked out on to the visible and intellectual world with the same eyes". Another insight into the man and his importance can be heard in his own words, where he illustrates the gap between science (philosophy in his terms) and religion. Newton said: "we are not to introduce divine revelation into philosophy nor philosophical opinions into religion". It is interesting to note here that for him science should not devalue the metaphysical, the realm of the transcendental.

Newton saw the two as separate. He believed you could not look at the heavens and find God nor could you apply the laws of motion to the afterlife. So, he did not use science to assassinate spirituality and religion, in fact he saw himself as the latest prophet from a long tradition. He was simply the deliverer of God's truth to his generation.

### **The Choices We Have Made**

Isn't it interesting that Newton could almost be held responsible for the divisions that were to emerge in human understanding and yet for him there was no division? We (as human beings) in fact made a choice: we could have pursued the magic of Newton or the science (philosophy) he brought to the world. We chose science because we could 'see' it worked and therefore thought it was the 'truth'. What must never be forgotten however is that this was a choice, we adopted a particular perspective which to Newton would only have been half the picture, the other half, having been the spirit world of alchemy, sorcery, and demons.

In making this choice we say something about ourselves in terms of the 'truth' we require of the world. After two and a half centuries of the irresistible progress of the Newtonian model and ideal, the philosopher, Ludwig Wittgenstein (1889-1951) was to point out, that the fact that we can see the world in terms of Newtonian mechanics tells us nothing about the world, that we do see it, however, tells us everything. The thrust of his position was that without human imagination we were unable to take these laws and make sense of what was really going on. Sadly, we chose the power and the magic of numbers and the 'seeming certainty' of what we could see. The power of

imagination and the unseen has not been fully explored. Many figures have been held up as makers of the modern world but only Newton has truly earned the title.

However, despite the 'clairvoyance' of Newton and Galileo neither of them truly addressed the most pressing crisis created by their work. This was perhaps because they believed their 'own' modifications of the religious view were adequate, as neither of them were atheists. For Newton, God had merely set the mechanism in motion and so nature and its laws were doing the rest. For Galileo God had simply written two books: one concerning man's salvation and the other concerning nature. It was another seventeenth century man who saw the problem posed by science more clearly than either. This man went on to write many of the rules by which we still choose to live.

He saw that the success of science demanded a new investigation into the nature of knowledge, on his travels through northern Europe he saw the Cardinals gather in Rome during the years in which the church was suspiciously and wearily assessing the meaning of the new science. He was at the centre of things during this time and his name was René Descartes. On the back of several visions he felt that it was his destiny to unify all scientific knowledge and over the next eighteen years this is what he did.

### **Philosophy – A Unifying Force?**

If Newton's destiny was to be the last of the Old Sorcerers, then Descartes was to be the first of the new philosophers. He is routinely called the father of modern philosophy, and this is probably justified for he created the terms for almost all the future philosophical debates that followed. It's probably only in our time that one could argue that his reign has come to an end. He was born in 1596 and died in 1650, so he just about managed to be a contemporary of both Newton and Galileo since Galileo died in 1642, which was the year of Newton's birth, who died in 1727. Descartes wrote the script for science, although he never saw the full flowering of that knowledge. Descartes was an important scientist, mathematician, and philosopher and this made him ideal for trying to bring these huge topics together.

The project Descartes embarked upon was to define the 'spirit' of the coming age as precisely as Newton's work had defined its 'mechanics', which he did in his famous work *Le Discours de la Méthode* in 1637, and through a number of essays that followed. To further understand this point in history and therefore the role of Descartes, it is important to understand that the new science was in fact also filling a vacuum that Christian intellectualism was itself creating. A tug of war between Protestants and Catholics was helping to create a spiritual void as the war of words continued to rage. Protestant Europe was more intent on the private salvation of individual souls than on the salvation of the Roman Church.

Protestantism was insisting on a return of the primacy of the bible, which was a revolt against the authoritarian Catholicism of the time. Scepticism as an attitude to religious authority was born because it was clear that politics rather than truth was influencing the religious tug of war, and so the seeds of doubt were further being scattered. This was the unfortunate contribution of the Reformation and Counter Reformation. So, amongst these conflicting voices of religion, *Scientia Nuova* was revealing a 'truth' all of its own. Descartes saw that the old physics and cosmology were being discredited and science demanded a new basis for knowledge. This new knowledge ironically was essentially metaphysical in nature because even though science was now laying claim to the 'truth', it still asked of those who would worship at its altar to have faith in the subjective certainty

of the scientist's objectivity. This became a perennial question and fundamental challenge for Descartes and every other philosopher: how does the perception of the one who's pursuing the truth affect his discovery?

It's important to note that Descartes, like Newton and Galileo, was a believer but he realised that belief alone could not produce the clarity and the lack of ambiguity which he, as a scientist of the new age, required. He had found a basis for certainty within himself, but he had to join this to his faith. The only thing outside his mind of which he could be as sure as he was of his own existence, was God. So, although he was not able to 'prove' God's existence, Descartes' God was the foundation of the delicate structure of the self. God, for him, supported 'the one certainty' of his own thought. This certainty would become for many a criticism and a flaw in Descartes' philosophy, as 'modernity' became increasingly sure of itself, creating a world where there was no need for God. As modernity got off its knees and began to walk, the question was being asked, if there were such a being, what role could he serve as man's increasing omnipotence was becoming clear?

Descartes' legacy seems similar to Newton's. Just as Newton was a sorcerer as well as a scientist, we chose his science. Descartes was a man of God as well as a philosopher, we chose the philosopher. It seems that sorcery and faith were considered too feeble to co-exist with science. Here again there is an irony as our brief recounting of this strand of history unveils. A man who believed in God, found that his contribution to our scientific understanding has inadvertently also contributed to the diminishing of God's importance in the cosmos. This clearly wasn't his intention but nevertheless it's what has happened. His encouragement of honest scepticism led to the continued erosion of the previously accepted.

Descartes had entertained the pious hope that his own doctrines would become part of the orthodoxy of the Catholic Church but after Galileo's trial and incarceration he lived in fear of persecution for what he wrote. What he did was to place epistemology, that is to say, the study of knowledge, at the centre of the philosophical debate and this would reign for the next two centuries. Some would say it still does.

## **Modernity Finds Its Feet**

It could be argued that Galileo, Newton, and Descartes had helped to changed men into Gods. However, these Gods were not to have a true sense of the moral and spiritual responsibility that went with that power because the primary concern was for knowledge itself. This deity status was also visible in the mid 16th century amongst the great artists of the day: architects, painters, and sculptors such as Michelangelo, Leonardo da Vinci and Raphael – these were men who were considered to be of unprecedented greatness. An age of science and individualism continued relentlessly. By 1700 the primary elements of the scientific universe were in place. It had been a hundred and fifty years since Copernicus had dared to displace the earth from its privileged place at the centre of creation and together with that displacement God too was increasingly being displaced from his former position at the centre of the heavens.

Newtonian physics had now relegated the concepts of heaven and hell to the geography of metaphor. No longer did God reside in a heaven 'up there'. And where now was hell located? These theological questions that once had unchallenged answers were demoted to scepticism and speculation. Mathematics had now begun to replace scripture as a way of explaining the world. Mathematics also became an alternative form of classicism to that of Aristotle. It was the new lens

used to both perceive and understand our reality – modernity's alternative. The ancient theories of Pythagoras' seemed to further 'prove' the validity of the new language and yet in these early days of new science an undercurrent of contradiction remained. A number of Plato's (428BC –348BC) idealistic philosophical principles seemed to be embraced as Aristotle had largely been dethroned at this point.

Plato's insistence on the imperfection of the world of our senses had attributed perfection to the sun, so the heliocentrism of Copernicus and Kepler started to elevate Plato above Aristotle in the ever-shifting worldview. Plato's belief in perfection was more comfortable in an infinite universe, which was largely in alignment with Newton's laws. Aristotle denied the notion of an infinite universe in his cosmology, which is another reason why Platonism as the ancient model of wisdom superseded Aristotelianism. Plato's semi resurrection of, and affiliation to, 'early science' is important because it called into question certain preconceptions, namely that science was only about the 'stuff' of common sense.

Platonism is essentially mysticism; Aristotelianism is grounded in common sense. Science could be said to be more Platonic in inspiration and yet is more commonly associated in our minds with the idea of common sense – indeed, one of the more celebrated definitions of science is 'organised common sense'. But does this definition tell the whole story? Is it not the case – like most of life's mysteries – that the answers are found at the point of convergence? Isn't it true that both mysticism and common sense are needed? Science's own birth and evolution would suggest the answer is yes. However, once again we seem to have chosen one side of the equation, that is, common sense over mysticism. We believe these choices tell us more about ourselves than about the 'rightness' of our decisions.

## **The Divided Self**

Descartes, in suggesting an inner self-awareness as the basis of all knowledge, helped to set up a dualism that has cast its shadow on the scientific movement ever since. His propositions in effect divided 'us' from our bodies, reason from passion, mind from matter. He believed our true identities resided in our minds or souls, the seat of which he concluded was the pineal gland in the brain. He also concluded that the body was an indispensable companion of the soul, part of the world of matter. However, given the Church's crisis of authority and the pace at which events were unfolding, this was not a message the world was ready to embrace. The 'age of reason' and its claim to transcend the deceptive and inadequate 'evidence' of our senses was moving forward relentlessly. And so, this philosophical position was being lost in the stampede. It's worth noting that Descartes' brilliant mind dared to put these perspectives on the table at a time of theological turbulence in Europe. This is why he and his contemporaries at times feared for their safety, should they fall prey to the same fate as Galileo. However, the concept of a soul, separate and distinct from the human form, had long been upheld and prized in the East, especially in India.

So, what was clearly a challenge for the western mind had long been embraced by the eastern heart. The 18th century saw the (at least partial) triumph of reason. Descartes' fear that knowledge would possibly separate from 'value' had now come to pass. The more that science unearthed the further it seemed to drift from morality and life's greater purpose. It became completely consumed with the next set of revelations, which, it continued to believe, held the key to complete understanding. The paradox of its findings continued. On the one hand these insights into nature seemed to further endorse the existence of a guiding, creative hand... God: the complexity and adaptive quality of

nature, ever striving for perfection, seemed to confirm that there must have been some conscious design. On the other hand, science's evaluation of things seemed to suggest everything could be explained with no reference to anything divine. This duality still remains.

### **The Age of Enlightenment?**

If Aristotle embodied the wisdom of the ancients and Aquinas the wisdom of the Middle Ages, then Immanuel Kant (1724-1804) embodied the period of scientific enlightenment. In many ways Kant was an heir of Plato, an idealist who considered our understanding of the world as woefully deficient. He developed a new epistemology (study of knowledge) as a response to the crisis of modernity, where 'value' was competing with the force of knowledge. Kant tried to encourage the western mind to look inwards in order that it might contemplate its own moral and metaphysical anatomy. He believed that all we had were our perceptions and these were inadequate in our attempts to know the ultimate truth, not least of all because we are conditioned by various categories of experience, which in turn shape our perceptions.

Kant constructed (re-introduced) a morality and conscience into this age of reason and alleged enlightenment. It's worth remembering for the sake of context the tension that existed at this time of scientific enlightenment. Those who led this movement saw science as the weapon that could slay superstition and religion. They believed that scientific 'method' standing on the shoulders of observation was the only way to attain knowledge. Ironically, as stated earlier, this revolution was largely fuelled by Newton's immense contribution to the age of reason and yet Newton had never intended for God and religion to be undermined in the way they undoubtedly were. Before Kant, the opposing voice speaking out against the increasing certainty of scientific supremacy was being persistently articulated by John Locke (1632-1704), a close friend of Newton, who built a philosophy largely centred around Newton's science (philosophy). He later was considered, alongside Newton and Francis Bacon (1561-1626), to be part of a unique English trilogy of minds. Bacon was a philosopher, scientist, lawyer, and parliamentarian. He was a significant persona in the scientific revolution.

The trio's contribution is well documented elsewhere; we're only touching on some part of this here. (For those who want to take a closer look at their overlapping relevance and influence at the time, we would recommend you do so to further understand their contribution). In 1690 John Locke famously wrote an essay entitled 'Concerning Human Understanding', in which he proposed that "experience was the only form of knowledge". He was educated at Oxford and fascinated by science, especially experimentation, which he nevertheless saw as a less than perfect path to true knowledge. So, he preceded Kant who would follow some 50 years later carrying a similar message. They both laid down a challenge to the ever-increasing momentum of science, as it appeared to them to lack soul – a conscience.

Kant's philosophy is a direct reaction to what he perceived to be the cold, inhumane approach of science. He saw the removing of man from the centre of the universe as leaving humankind 'rudderless', without identity and purpose. The lack of direction and doubt that he saw emerging is why he encouraged introspection. It was 'within' not 'outside' that we would find value. This proposition had at its heart Locke's belief that experience was the ultimate knowledge, the ultimate path. Kant's work has been used to explain and justify many strands of philosophy according to which interpretation of history you adhere to. This is undoubtedly in part because he brought a sense of man's value back to the debate at a time when man's relevance was clearly fading. So,

whether you choose the more 'romantic' interpretations of his work or the existential and analytical facets of his philosophy that remain today, the truth is that he brought the notion of our importance back to the scientific revolution through the resurrection of the irreducibility of man. His metaphysical contribution, however, would be brushed aside and overrun by the 'practical incarnation of science', better known as modern technology. This began in England in the 18th century with what we have come to know as the industrial revolution.

### **The Industrial Revolution – The Age of The Machine**

The baton had now been passed from Descartes, Galileo and Newton to Richard Trevithick, Josiah Wedgwood, and Benjamin Franklin. Scientia Nuova officially became science and because it worked, its authority was questioned less and less. More cities were born out of the increasing industrialisation, as peasants abandoned the land to become urban participants in the new dream. Out of this technological revolution emerged factories, steam-engines, cars, clocks, and rockets. So, man's success was undoubted and the sophistication of what he could do continued to be re-defined. However, the question concerning the great 'Designer' was still being raised but it was increasingly falling on deaf ears. Science's central role was being considered indisputable. There was now a mistrust of philosophers such as Kant and Hume who had dared to question the morality and 'truth' that science was unveiling. Science was now a wilful adolescent, demanding its autonomy.

The idea that the complexity of nature in all its glory was somehow inextricably linked to a great Designer. God was a premise now only really being upheld by religion in all its various forms. By the end of the 19 century this premise lay in tatters and the foundation for our current world view (increasingly sceptical and suspicious) had firmly been established. Hence the large pockets of atheism, probably larger pockets of indifference and the ever- diminishing band of believers who almost habitually apologise for their faith. However, there are those, partly in retaliation to this position, who continue to bully and terrorise those who would oppose the 'certainty' of their religious view. As events gathered pace and the Industrial Revolution continued its march, the same questions were being asked. Is it a question of observation over theory? - or of observation over experience? Is it the tangible over the intangible?

Science continues to battle with its own neurosis, and we believe was and is asking the wrong questions. Our proposition is based on the notion that 'the whole is greater than the sum of its parts', and that synergy is the answer. We believe, supported by our clinical and professional experience, and extensive research in the area of personal development, that 'truth' is to be found at the point of convergence, that is, at the point where these (seeming) opposites meet. We believe in co-operation and collaboration over conflict. Why should we believe that the truth either exists in the tangible or the intangible? Isn't it possible that both offer a different piece of the same jigsaw? We believe the evidence says 'yes'. (See The Story of Health – on the Philosophy page).

This synopsis would not be complete without mention of both James Hutton and Charles Darwin. James Hutton was born in Edinburgh in 1726. He studied law, medicine, and geology (although geology didn't actually exist then). It was through his observations that geology as we know it was born. Geology as a science was created around the central idea of colossal and continual change. In other words, the earth was moving under our feet. And because we couldn't detect that movement it meant that it was very slow. This led science to revise all previous calculations for events on earth. The biblical and scriptural references to time were being forsaken as observation

and reason again dominated. The idea of infinite time to accompany infinite space now came together. It should be said that this euro-centric notion of infinite was and remains a centrepiece of eastern thinking, so would not have been considered new in that part of the world. Darwin's contribution (1809-1882) is better known, and as a result better celebrated. His theory was that of 'natural selection'. Darwin didn't explain the origins of life but once it was here, he believed the principle of natural selection took over. The essence of his theory was the 'survival of the fittest'.

The genes of those species that survived the evolutionary process would be passed on and the new organisms would by virtue of this process be better suited to the environments they occupied. In other words, the 'best' qualities of each species would be passed on to their offspring, creating better adapted and more 'successful' organisms. Within this dynamic there were chance mutations, which offered variation of species. The slow pace of such a theory (as these evolutionary processes needed thousands and even millions of years to take place) was being more easily accepted because of Hutton's earlier geological work. Darwin's theory of evolution was to do more damage to the religious orders than any other theory that had gone before. This was science's most arrogant assault. Almost overnight humans had gone from being the children of God to the descendants of apes and before that, algae. Life's (nature's) complexity was now able to be explained within the context of infinite time and had nothing to do with a Divine Designer at all. For Darwin, this was how it was whether we liked it or not: it was the 'truth', all else was wishful thinking. We were accidental animals conceived out of a self-propelling process of natural selection. Is that all we are? Should we be accepting the limitations of this hypothesis? It's worth noting that Darwinism, although presented as the truth, has not been proven. And although it has much persuasive and some irrefutable evidence born of observation and reason, is it the whole story? We don't believe it is. For us Darwinism is incomplete. It is, yet again, merely a 'piece' of the jigsaw puzzle, not the 'whole' puzzle as it would have us believe.

One cannot help but feel sorry for Jean-Baptiste-Lamarck (1744-1829). He clearly suggested the concept of evolution 50 years before Darwin! Lamarck gave us the word biology, but unfortunately for him, his version of evolution was dismissed as he got the 'mechanism' wrong. He believed in the 'inheritance of acquired characteristics' i.e., a giraffe's long neck had evolved to that length due to striving to reach for leaves, and this 'acquired' characteristic was passed on to the offspring. This was in stark contrast with Darwin's theory who believed that in every generation of giraffes there were those who had longer necks than average because they were genetically favoured; therefore, as they had a better chance to feed, they survived better and passed on their favourable genes to their offspring. The Darwinian story has been well documented, and we certainly are not attempting to re-tell it, there is far too much to document here anyway. Our reference to it is simply to offer another insight into how the present has been shaped by the past. The Darwinian and the Lamarckian hypotheses (despite the lack of evidence for his interpretation) have both played their part in driving us to probe deeper into the evolution of the species.

The genetic revolution continued and took on an even greater significance when the Anglo-American team of J.D. Watson and F.H.C. Crick (1916-2004) discovered the molecular structure of deoxyribonucleic acid (DNA). DNA is the carrier of the genetic message, and some might say it is the absolute essence of who we are: dark, tall, thin, brown hair, fat etc., all this data and more is said to be encoded in this complex molecule. For a while it seemed that the genetic revolution would complete man's understanding and further underpin science's supremacy. It's worth noting that although Watson and Crick have famously claimed the prize for this discovery, there were other contributors to this achievement i.e., Fred Griffith, Oswald Avery, Rosalind Franklin, and Linus Pauling all played a part. The 'gene machine' has been running ever since and continues to occupy



our imagination and research. However, even though there are those who continue to tow the party line and would say this is indeed the final frontier, the latest discoveries made in the field of epigenetics (we are more than our genes – see our research page or read *The Biology of Belief* by Bruce Lipton PhD) and neuro-theology (where science meets spirituality – see our research page or read *The Blissful Brain* by Dr. Nataraja) are re-writing our understanding on these discoveries, literally as you read this synopsis.

The essence of their insights and revelations is that (a) we must be more than our genes as we only have around 30,000 genes underwriting all human function. Since the human machine is performing billions of activities, how is it possible if we are simply driven by our genes? In addition, the number of genes of human beings (30,000) is about the same as mice. Even rice has more genes than humans!! (b) Currently there is so much that neuroscience is teaching us about ourselves and much of that relates to philosophies and principles we have largely thrown away. Maybe it's time we reviewed the way we are living and what we deem to be sacred? Ask yourself this question: is our current model of the world working? Has science, beyond its obvious splendour and convenience, truly brought us peace and happiness?