

Christian ethics and the concept of creation

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Introduction

To a particular group or community, the word ‘ethics’ suggests a set of standards by which the group or community decides to regulate its behaviour, to distinguish what is legitimate or acceptable in pursuit of their aims and what is not. Hence we talk of ‘business ethics’ or ‘medical ethics’. In the same lay sense Christian ethics will be intended to be a practical guide to living and not merely an exposition and analysis of doctrines.

As a philosophical term ‘ethics’ has clear connections with everyday usage, but is not identical with lay ‘ethics’. Like all philosophical endeavour it is an investigation into the fundamental principles and basic concepts that are or ought to be found in a given field of human thought and activity. Being a branch of philosophy, it is a theoretical study.

Our science, including ethical perceptions, is rooted in our view of the real world in which we live. Our incentives, our basic ideas (our motifs) in forming science are determined by what Dooyeweerd¹ called our religious motif. The real world, its being and becoming, is fundamentally rooted in our idea of space and time and in the physical, biological and social realities around us.

Natural sciences seek to explain all of reality in terms of purely natural processes and entities. The supposition that nature is self-sufficient leads to naturalism. The underlying theme of naturalism is the belief that nature exists by itself, deriving all meaning and purpose from itself – it needs nothing outside itself to explain it. The implication is that the meaning and purpose of ethical issues have also to be derived from nature. If God exists at all, he plays no significant role in the world or in ethical issues. Naturalists reject the notion that a supernatural being can intervene in the natural world, and can determine meaning and purpose to the world.

Classical mechanics expresses Newton’s belief in absolute space and absolute time, the cornerstone of classical physics. Newton published in 1687 the *Principia*², which formalized Galilean mechanics. The *Principia* provides a comprehensive system of mechanics, which accounts not only for the motion of physical bodies on or near the surface of the Earth, but also for motion throughout the universe, including that of the moon around the Earth, and of the Earth and other planets around the sun.

In 1905 Albert Einstein discovered three seemingly unrelated phenomena which were to have a lasting consequence on physics, technology and society. So much so, that the influential US news magazine, *Time*, declared him “Person of the 20th Century”

¹ Dooyeweerd, H., *Vernieuwing en bezinning, om het reformatorisch grondbegrip*, J.B.van den Brink & Co., Zutphen, 1959:15.

² *Philosophiae Naturalis Principia Mathematica* (1687), usually known as *Principia*.

beating all the world's politicians, military leaders and other powerful people. In honour of these discoveries in 1905, the International Union of Pure and Applied Physics (IUPAP) declared 2005 the International Year of Physics, to commemorate the foundations of modern physics laid by Einstein³.

Einstein discovered (1) the explanation for the phenomenon that when light falls onto metal it gives off electrons, called the photo-electric effect, (2) how to calculate the size of atoms from so-called Brownian motion, and (3) that all motion is relative and that nothing can move faster than the speed of light (which is an incredibly fast 300 000 kilometers per second!) - this is his Theory of Special Relativity.

“The question is, of course, what this all means for the average citizen of the world. Well, relativity is the cornerstone of our modern picture of the universe, which says that it was created in a Big Bang some 14 billion year ago and is expanding (probably) forever. More important, if chemists and biologists did not understand the nature and size of atoms, our medical and health services, and our entire chemical industry (petrol, plastic, synthetic materials, etc.) would not exist. Finally, the photo-electric effect was the forerunner of the transistor (discovered in 1947) and lasers (from early 1960's) that have revolutionised our entire communications industry with computers, cell-phones, laser discs, dvd's, digital cameras, the internet, and automatic banking services. It is interesting to note that the most famous equation of physics, $E = mc^2$, is a consequence of Einstein's relativity, and that this aspect has had a negative consequence - the nuclear bomb. However, South Africa uses this mass-to-energy conversion today for peaceful purposes in the development of the Pebble Bed Modular Reactor (PBMR) that can generate electricity from nuclear reactions without producing the heavily polluting carbon dioxide”⁴.

This then is the way we think today about the world we are living in:

- (1) A world that was created in a Big Bang some 14 thousand million years ago. This creation in a Big Bang had to be a unique event, because it cannot be repeated and cannot be proved that it had happened, although there is evidence suggesting this, or rather, evidence that may be interpreted in terms of this Big Bang scenario.
- (2) A world that is characterized by relativism.
- (3) A cosmology, of which knowledge comes to us at a fixed speed of light.
- (4) A world with interplay between matter and light.
- (5) A world in which matter and energy are quantitatively equivalent.
- (6) A world with science that does not recognize God of the Scriptures.
- (7) A world with humanistically derived ethics.

All three fundamental components⁵ of a worldview are involved in the above-quoted discoveries of Einstein. The first deals with the nature of reality⁶, the second with

³ <http://www.einsteinyear.org>

⁴ Summarized by the South African Institute of Physics for celebrating the Einsteinyear on 7 July, 2005 at the University of Pretoria.

⁵ J.D. Nickel, *Mathematics, is God silent?* Ross House Books, 2001: 7

⁶ The nature of reality may be subdivided in cosmology (the nature and structure of what exists – how the universe works), cosmogony (the origin of what exists), and ontology (the nature of existence and what kind of things exist).

epistemology, with how we know what we know, specifically the study of the nature and limits, the grounds, of human knowledge. And the third deals with ethics – the study of right and wrong attitudes and actions.

Scientific theory and language

Scientific theories do not simply flow from observations. A large measure of imagination and invention is also involved. For instance, conservation of energy is a fundamental principle, governing all natural phenomena that are known to date. This principle (or law) states that there is a certain quantity, which we call energy that does not change in the manifold of changes in nature. This is an abstract idea, because it is a mathematical principle that says that there is a numerical quantity, which does not change when something happens.

Conservation of energy can be understood only if we have the formula for all its forms. To physicists energy means capability to do work. A body is said to possess energy when, by reason of its position, velocity, or other conditions, work may be performed during an alternation in the conditions. Thus an elevated body is said to possess energy because work can be done by the gravitational force if the body is allowed to descend. This kind of energy is called potential energy. Energy possessed by a body by virtue of its motion is called kinetic energy.

Galileo discovered the principle of inertia, which states that if something is moving, completely undisturbed with nothing touching it, it will go on forever, at a uniform speed in a straight line. Newton modified this idea, saying that the only way to change the motion of a body is to use a force. Thus Newton added the idea that a force is needed to change the speed or direction of motion of a body. This is Newton's first law of motion. This abstract idea of a force is quantified by Newton's second law of motion. In this law mass is added as a quantitative measure of inertia.

For Descartes the essence of matter was its extensiveness. Newton did not accept this idea, because for him space and matter differ conceptually. Consequently he introduced the quantity 'mass' as a physical characteristic of matter, independent of extensiveness, and wrote his second law of motion as $F = ma$. By this equation he defined force to be equal to the product of mass and acceleration. Acceleration can be defined if we know the meaning of position and time. This equation simply says that "if a body is accelerating, then there is a force acting on it".

It is obvious that scientific language must do more than merely refer to the physical world. It must accommodate also the world of ideas and concepts. Science needs these to explain observations in terms of theoretical entities and principles.

Being and becoming

For Aristotle, physics was the science of processes, of changes that occur in nature⁷. For Galileo and Newton, and other founders of classical physics, the only change that could be expressed in precise mathematical terms was acceleration, the variation of

⁷ Ross, W.D. *Aristotle's physics*. Oxford: Clarendon, 1955.

the state of motion. In classical (Newtonian) dynamics time appears as a parameter, and it is used to calculate state of motion in the past and in the future, given the state of motion at the present time and the acting forces as a function of time.

The dynamics of Newton seemed to form a closed universal system, capable of yielding answers to any questions asked. Today we know that Newtonian dynamics describes only part of our physical experiences. Since the beginning of the 20th century we know that science is not a closed subject. The idea of Newtonian physics was a static universe, with (absolute) time synchronised at all positions in a universe of infinite dimensions, a time in a universe of *being* and not a universe of *becoming*.

Newton's universe was always there, with infinite extensiveness and with the same time intervals everywhere. Einstein's presupposition of constancy of the speed of light brought time differences into the observable universe, which is now of finite extend. The distance of an object in the universe is now measured in lightyears, i.e. the time it takes for light to arrive at earth from a distant object. The light of the most distant astronomical objects, that we observe today, is anticipated to have taken about 9 thousand million years to arrive at earth. This means that those objects have existed at least this number of years. The universe must then be older than 9 thousand million years.

Furthermore, in the late 1920s the American astronomer Edwin Hubble discovered that light from galaxies was shifted towards the red, and that this red shift was roughly proportional to the distance of the galaxy. It is then logic to interpret the red shift in spectral lines from distant galaxies in terms of an expanding universe, that originated in the spatial singularity of a Big Bang some 14 thousand million years ago. This universe of finite age and extent is generally accepted today, but rests on several presuppositions, that cannot be proved.

Irreversible processes

In a universe of *being*, as describes by Newtonian dynamics, time is reversible, i.e. time may be extrapolated to the future and to the past. Irreversible processes are characterized by unidirectional time, for instance processes described by the second law of thermodynamics. It is only recently that we began to understand the constructive role played by irreversible processes in the physical world.

The role of irreversible processes becomes much more marked in biological or social phenomena. Even in the simplest cells, the metabolic function includes several thousand coupled chemical reactions and, as a consequence, requires a delicate mechanism for their coordination and regulation. Furthermore, the metabolic reactions require specific catalysts, the enzymes, which are large molecules possessing spatial organization, and the organism must be capable of synthesizing these substances⁸.

If we look at the manner in which the cell performs a complex sequence of operations, we find that it is organized along exactly the same lines as a modern assembly. Such an organization is clearly not the result of an evolution toward molecular disorder, as predicted by the second law of thermodynamics. Biological order is both architectural and functional; furthermore, at the cellular and supercellular levels, it manifests itself

by a series of structures and coupled functions of growing complexity and hierarchical character. This is contrary to the concept of evolution as described in thermodynamics of isolated systems, which simply leads to that state of maximum number of complexions and, therefore, to disorder⁸.

The origin of the physical universe

The problem of the origin of the physical universe lies on the boundary of science. Indeed, many scientists would say it lies beyond the scope of science altogether. Nevertheless, there have recently been serious attempts to understand how the universe could have appeared from nothing without violating any physical law. But how can something come into existence uncaused?

The law of cause and effect, so solidly rooted in the ground of daily experience, fails in the world of the quantum. Spontaneous change in this world is not only permitted, but is unavoidable. It has become fashionable to apply quantum physics not only to the microworld of atoms, but to the entire universe, a subject known as quantum cosmology. These applications are tentative and extremely speculative, but they lead to a provocative possibility. It is no longer entirely absurd to imagine that the universe came into existence spontaneously from nothing as a result of a quantum process⁹.

Paul Davies, well-known physicist for explaining the significance of advanced scientific ideas in simple language, addresses the questions: How can the universe, having come into being, subsequently bring into existence totally new things by following the laws of nature? Put another way: What is the source of the universe's creative potency?¹⁰ He answers these questions by accepting that the universe can be understood by the application of the scientific method. He is convinced that the organizational principles needed to supplement the laws of physics are likely to be forthcoming as a result of new approaches to research and new ways of looking at complexity in nature. He believes that science is in principle able to explain the existence of complexity and organization at all levels, including human consciousness, though only by embracing 'higher-level' laws¹¹.

He concludes¹¹: "The very fact that the universe is creative, and that the laws have permitted complex structures to emerge and develop to the point of consciousness - in other words, that the universe has organized its own self-awareness - is for me powerful evidence that there is 'something going on' behind it all. The impression of design is overwhelming. Science may explain all the processes whereby the universe evolves its own destiny, but that still leaves room for there to be a meaning behind existence".

The miraculous world

The creation of the universe is usually envisaged as an abrupt event that took place in the remote past. This picture resembles the biblical account of creation (Gen 1:1) and

⁸ Ilya Prigogine, *From being to becoming*, W.H. Freedman and Co., 1980:83.

⁹ Paul Davies, *The cosmic blueprint*, Penguin Books, 1989:4,5

¹⁰ Paul Davies, *The cosmic blueprint*, Penguin Books, 1989:6

¹¹ Paul Davies, *The cosmic blueprint*, Penguin Books, 1989:203

is reinforced by the scientific conception for a Big Bang. Cosmologists believe that immediately after the Big Bang, the universe was in an essentially featureless state, and that all the miraculous structures and complexities of the physical world we see today somehow emerged afterwards¹².

Since the Renaissance, scientists started to believe that there is an objective reality beyond our experiences. Science, with its reliance on observational data and logic, was viewed as the best means of acquiring truth about this objective world. By this view God's interaction and upholding of the physical world by his Word, was gradually removed from the world. Man sought to reinterpret the universe according to his own standards, assigning new meaning to the world transforming it to suit his own purpose.

Descartes had viewed man as a duality, consisting of a physical body controlled by an immaterial mind or soul. As to the question of how an immaterial soul or mind would interact with a physical body, Descartes asserted that God brought about this interaction similarly as God who is spirit, creates and upholds the physical world. With the success of the sciences since the Renaissance, the mind came to be regarded merely as a part of the physical body. This materialistic view of man was reinforced by Darwin's theory of evolution, which postulated that all kind of life had evolved from non-living matter, including mind and consciousness¹³.

Today natural sciences are concerned with highly subjective aspects. On a special workshop held at Windsor Castle during September, 2002, the topic was "Fine tuning in Living Systems". This was the second of a series of meetings sponsored by the Templeton Foundation, to examine the question: "Is there evidence of universal purpose in the cosmos?" Physical, biological and cosmological aspects of the *antropic principle* have been examined. This principle states that the laws of nature must be such as to admit the existence of consciousness in the universe. This principle and the organizing properties of complex systems are considered to supplement the laws of physics and chemistry, and may have directed the emergence of the present world with conscious life¹⁴.

Scientific theories do flow from what we observe, but theories involve also a large measure of imagination and invention. For instance, the Newtonian and the Einsteinian universes are fundamentally different, and so also the physics of our living world and that of the atomic world. The result of these developments was that scientists and scholars accepted the natural sciences as the only means of acquiring truth about the world. Consequently, religion, ethics, and metaphysics were widely thought to be void of any real content. Everything was to be explained in terms of purely natural processes. Humanity must create its own meaning and cultural values.

Revelation of God in nature and Scripture

Reformed teaching recognizes the revelation of God in nature, but God does not speak through nature with either express commands or clear propositions. Christians put

¹² Paul Davies, *The cosmic blueprint*, Penguin Books, 1989:1

¹³ John Byl, *The divine challenge*, The banner of Truth Trust, Carlisle, PA, USA, 2004:38,39.

¹⁴ B.J. Carr and M.J. Rees, *Fine-tuning in living systems*, International Journal of Astrobiology 2 (2), 2003:79-86.

also their faith in science, but they know the scientific avenues for discovering truth is not infallible. They know that secular worldviews such as naturalism and materialism are grounded firmly in the modern scientific methodology and enlightened human experience. They know that nature in itself cannot tell us how to live or what it is that is right for us to do. Science, for the Christian, cannot be a principle of authority independent from the Word of God. It is from Scripture that we learn our purpose in the world, and the place our cultural efforts are to occupy. To use empirical observations of mankind's supposedly material welfare, and nothing more, is to ignore the ethical dimension. Scripture must be our ethical perspective at the onset.

Originally, man wished to do what God commanded because he realized it was for his own good. Man would put forward the best possible work - the greatest self-aggrandizing act he was capable of - by attempting to carry out self-consciously what God had ordained as his purpose in life; the two would work together. After the fall, man saw his own good and the glorification of God as separate ends.

The concept of nature that took hold during the Renaissance, became more and more secularised as man began to seek an explanation for natural phenomena on a basis other than the cosmologies of Aristotle and Scholasticism. Nature has become modern man's most recent symbol for belief in man's independence from God. Man has found a way to transfer sovereignty from God to nature by introducing the theory of evolution - no further explanations were needed for man's existence.

The endeavour of science is to find unity in multitude, relatedness in diversity, continuity in discontinuity. By this way reality is simplified for scientific conception and description. This leads to the notion that the unity of truth and the unity of reality are rooted in continuity, and that nature inherited no discontinuities or jumps, that discontinuities are expressible in continuity. This enables an evolutionary description of becoming and facilitates the emergence of new structures and complexities from less complex structures, including structures in the biological world.

The biblical account of creation is not that of a continuous process, but an account of discrete supernatural acts. These creational acts cannot be inferred from observations in nature or from scientific investigations. There are those who interpret the harmony and order of the cosmos as evidence for a metaphysical designer. For them the existence of complex forms is explained as a manifestation of the designer's creative power. The existence of complex things is even more remarkable given the generally delicate and specific nature of their organizations and structures.

The rise of modern science transformed the rational scientific approach to the problem of the origin of things. The evidence of geology, palaeontology and astronomy suggested that the vast array of forms and structures that populate our world have not always existed, but have emerged over aeons of time¹⁵. Hence, the theory of evolution becomes credible, embracing a *continuous* 'growth' into being for all that exist in the universe.

From the Scriptures it is evident that God upholds the universe after completion of his creative acts. He does not merely preserve the universe, but he also governs it. His

¹⁵ Paul Davies, *The cosmic blueprint*, Penguin Books, 1989:3,4

governance has to do with that continued activity of God whereby he rules all things to secure the accomplishment of his divine purpose. Consequently the universe has to unfold, as evidenced by geology, anthropology and astronomy.

The sovereignty of God is such that the world that he created out of his free will, depends completely on him for its continued existence. In generally, he upholds the universe from moment to moment, in accordance to the features he has assigned to his creatures and the cosmic laws to which all creatures are subjected. God specifically created man for a purposeful task. God formed man to glorify him as his earthy steward by giving him dominium over creation. Man is therefore responsible to God, also in his formation of science, by which a miraculous world of boundless diversity from the atomic scale to astronomical vastness is revealed.

Ethics as a science is subjected to the same current views of nature and, therefore, to the same fundamental principles and methodologies than all other fields of the sciences. The focus and point of departure of Christian ethics should always be the purposeful task given to man and wife (Adam and Eve) at their creation. Both have been created to the image of God. Both share the obligation to be God's stewards, to till and to keep the Earth to the glory of God.

In conclusion:

All believers need to grasp the importance of the concept of creation, and how it informs our understanding of both God and man. (1) God of the Scripture teaches that He is the Creator; all that exists is His handiwork; (2) God transcends, or exists beyond and apart from all that He has made; (3) Gods immanence ensures that His purposes for the creation are accomplished; (4) Gods creation of man in His own image relates to the purpose behind life and culture; (5) Gods mandate for man to fill, subdue and have dominion over the earth implies that man has to build culture and civilization; (6) like God who works, man too was destined to work and to be dedicated to productive accomplishments.

Man's life is not a product of evolutionary chance, but a result of God's design and calling to a life task to the glory of God. The concept of creation is therefore an essential presupposition of the Christian ethic and of any scientific field.