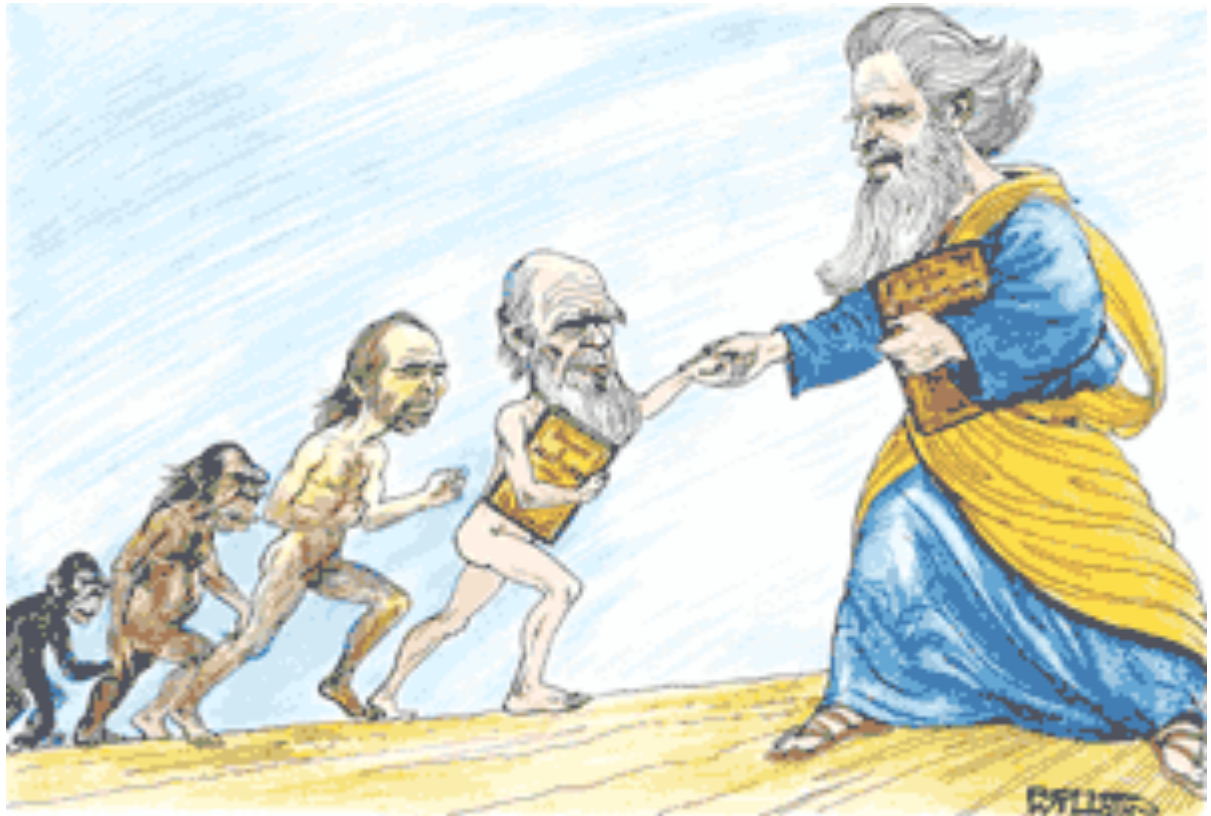


Coyne, G., SJ (2005) **God's chance creation**, The Tablet  
06/08/2005  
<http://www.thetablet.co.uk/cgi-bin/register.cgi/tablet-01063>



## God's chance creation

George Coyne

Cardinal Christoph Schönborn claims random evolution is incompatible with belief in a creator God. Here, in an exclusive rebuttal of that view, the Vatican's chief astronomer says that science reflects God's infinite purpose

The murky waters of the rapport between the Church and science never seem to clear. Despite the best efforts of John Paul II and of Benedict XVI, when he was Cardinal Ratzinger, the struggle still goes on to dispel myths, mistakes and misunderstandings. Even today, disquiet still rumbles over the treatment of Galileo, despite the formation of the Galileo Commission to investigate the treatment of the scientist after John Paul II realised that many in the scientific world still believed there was an intrinsic animosity between the Church and science.

The Commission's task was to investigate calmly and objectively the rights and wrongs of the affair on whatever side, the Church's or Galileo's, the responsibility lies. However, in the almost unanimous opinion of the community of historians and philosophers of science, it did not fully realise the expectations of the Pope.

There was a further attempt to ease the divisions between Church and science, when the International Theological Commission, under the presidency of Cardinal Ratzinger, and less than a year before he was elected to the Papacy, issued a lengthy statement in which it saw no incompatibility between God's providential plan for creation and the results of a truly contingent evolutionary process in nature.

Now the waters have again been darkened by the publication in the New York Times of 7 July 2005 of an article by Cardinal Christoph Schönborn of Vienna, a one-time student of Benedict XVI and a high-profile and influential figure in the Church, in which he essentially claims that neo-Darwinian evolution is not compatible with the Church's belief in God's purpose and design in creation. In so doing the cardinal dismisses as "rather vague and unimportant" the epoch-making declaration of John Paul II in 1996 to the Pontifical Academy of Sciences in which he declared that evolution is no longer a mere hypothesis and then proceeded, far from any thought of incompatibility, to draw reasonable implications for religious belief from that conclusion.

So why does there seem to be a persistent retreat in the Church from attempts to establish a dialogue with the community of scientists, religious believers or otherwise? There appears to exist a nagging fear in the Church that a universe, which science has established as evolving for 13.7 x 1 billion years since the Big Bang and in which life, beginning in its most primitive forms at about 12 x 1 billion years from the Big Bang, evolved through a process of random genetic mutations and natural selection, escapes God's dominion. That fear is groundless. Science is completely neutral with respect to philosophical or theological implications that may be drawn from its conclusions. Those conclusions are always subject to improvement. That is why science is such an interesting adventure and scientists curiously interesting creatures. But for someone to deny the best of today's science on religious grounds is to live in that groundless fear just mentioned.

Perhaps the following picture of God's relation to the created universe, as that universe is seen by science and interpreted by a religious believer, may help to assuage that fear. In the universe, as known by science, there are essentially three processes at work: chance, necessity and the fertility of the universe. The classical question as to whether the human being came about by chance, and so has no need of God, or by necessity, and so through the action of a designer God, is no longer valid. And so any attempt to answer it is doomed to failure. The fertility of the universe, now well established by science, is an essential ingredient, and the meaning of chance and necessity must be seen in light of that fertility. Chance processes and necessary processes are continuously interacting in a universe that is  $13.7 \times 10^9$  billion years old and contains about  $10^{22}$  stars. Those stars as they "live" and "die" release to the universe the chemical abundance of the elements necessary for life. In their thermonuclear furnaces stars convert the lighter elements into the heavier elements. There is no other way, for instance, to have the abundance of carbon necessary to make a toenail than through the thermonuclear processes in stars. We are all literally born of stardust.

How did that come about? Take one simple example: two hydrogen atoms meet in the early universe. By necessity (the laws of chemical combination) they are destined to become a hydrogen molecule. But by chance the temperature and pressure conditions at that moment are not correct for them to combine. And so they wander through the universe until they finally do combine. And there are trillions and trillions of such atoms doing the same thing. Of course, by the interaction of chance and necessity, many hydrogen molecules are formed and eventually many of them combine with oxygen to make water, and so on, until we have very complex molecules and eventually the most complicated organism that science knows: the human brain. While science cannot claim to know all of the links in this evolutionary chain, nor especially the passage to living organisms, there is very strong evidence for a large degree of continuity in the whole process. Carbon, for instance, found abundantly in both biotic and non-biotic systems, has remarkable bonding properties and those are necessary for life as we know it. Thermodynamics works in the same way in the non-living and living world. Information storage and transmittal is very similar in non-living and living systems. Life began on the earth, which formed about  $4.5 \times 10^9$  billion years ago, within about the first 400 million years, a relatively rapid transition to life. In

fact, the search for life's origins may be in vain. There may be no clear origin, no clear threshold as seen by science, between the non-living and the living.

This process of continuous evolution, called by scientists chemical complexification, has a certain intrinsic natural directionality in that the more complex an organism becomes the more determined is its future. This does not necessarily mean, however, that there need be a person directing the process, nor that the process is necessarily an "unguided, unplanned process of random variation and natural selection" as Cardinal Schönborn describes it. It is precisely the fertility of the universe and the interaction of chance and necessity in that universe which are responsible for the directionality. Thus far science.

Now, the religious believer asks, where does God the creator feature in this scientific scenario? If one believes in God's loving relationship with his creation, and especially with the human beings made in his image and likeness, and if one also respects the science described above, then there are marvellous opportunities to renew one's faith in God's relationship to his creation.

It is unfortunate that creationism has come to mean some fundamentalistic, literal, scientific interpretation of Genesis. Judaeo-Christian faith is radically creationist, but in a totally different sense. It is rooted in a belief that everything depends upon God, or better, all is a gift from God. The universe is not God and it cannot exist independently of God. Neither pantheism nor naturalism is true. But, if we confront what we know of our origins scientifically with religious faith in God the Creator – if, that is, we take the results of modern science seriously – it is difficult to believe that God is omnipotent and omniscient in the sense of many of the scholastic philosophers. For the believer, science tells us of a God who must be very different from God as seen by them.

This stress on our scientific knowledge is not to place a limitation upon God. Far from it. It reveals a God who made a universe that has within it a certain dynamism and thus participates in the very creativity of God. Such a view of creation can be found in early Christian writings, especially in those of St Augustine in his comments on Genesis. If they respect the results of modern science and, indeed, the best of modern biblical research, religious believers must move away from the notion of

a dictator God or a designer God, a Newtonian God who made the universe as a watch that ticks along regularly. Perhaps God should be seen more as a parent or as one who speaks encouraging and sustaining words. Scripture is very rich in these thoughts. It presents, indeed anthropomorphically, a God who gets angry, who disciplines, a God who nurtures the universe, who empties himself in Christ the incarnate Word. Thus God's revelation of himself in the Book of Scripture would be reflected in our knowledge of the universe, so that, as Galileo was fond of stating, the Book of Scripture and the Book of Nature speak of the same God.

Theologians already possess the concept of God's continuous creation with which to explore the implications of modern science for religious belief. God is working with the universe. The universe has a certain vitality of its own like a child does. It has the ability to respond to words of endearment and encouragement. You discipline a child but you try to preserve and enrich the individual character of the child and its own passion for life. A parent must allow the child to grow into adulthood, to come to make its own choices, to go on its own way in life. Words that give life are richer than mere commands or information. In such wise ways we might imagine that God deals with the universe.

These are very weak images, but how else do we talk about God? We can only come to know God by analogy. The universe as we know it today through science is one way to derive an analogical knowledge of God. For those who believe modern science does say something to us about God, it provides a challenge, an enriching challenge, to traditional beliefs about God. God in his infinite freedom continuously creates a world that reflects that freedom at all levels of the evolutionary process to greater and greater complexity. God lets the world be what it will be in its continuous evolution. He is not continually intervening, but rather allows, participates, loves. Is such thinking adequate to preserve the special character attributed by religious thought to the emergence not only of life but also of spirit, while avoiding a crude creationism? Only a protracted dialogue will tell. But we should not close off the dialogue and darken the already murky waters by fearing that God will be abandoned if we embrace the best of modern science.

George Coyne SJ is Director of the Vatican Observatory.