

“IN WISDOM YOU MADE THEM ALL...” (1)

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Does the human race have a special place and task in the cosmic scheme of things? The answer to that question has changed drastically over the past century or so. When our civilization could still be called Christian, it was normal to speak of mankind as the “crown of creation” and of its habitat, the earth, as a privileged part of the cosmos. True, Christians knew they were flawed, fallen beings. They also knew that the earth was puny, little more than a dot, by cosmic standards. But they did not for these reasons hold the earth or humanity in contempt. Both served a high purpose. Man had been given the earth as his dwelling place in order to have dominion over his fellow-creatures and so to serve God.

Today that conviction is largely gone. Faith in God has been declared a delusion, and with that faith the belief in the significance of both the human species and its habitat has also been lost. Rather than being exceptional, the earth is now a typical planet among many similar ones, and the human race is a chance appearance, no better than any of the other species and by no means essential to the earth’s well-being. According to some we are, in fact, the destructive element on earth, the enemy of the other species, the dangerous parasite whose demise would greatly benefit the planet. This is the opinion of some “deep ecologists,” extremist animal rights groups, and other radical branches of the environmentalist movement.

The Copernican Principle

Where did these ideas come from? Are they just subjective impressions, a product of our pessimistic postmodern worldview? According to a majority of today’s scientists, they are not. The current opinion regarding the earth’s and mankind’s insignificance, they say, is based on solid scientific evidence. Whereas people used to believe that the earth was at the centre of the cosmos, we now know that it is located in a corner of the Milky Way, which is but one of many billions of galaxies. This physical “dislocation” implies, we are told, a drastic reduction in our status and provides scientific proof against the biblical message of mankind’s (and the earth’s) unique position, origin, and purpose.

These beliefs receive their justification from the so-called Copernican Principle, which is held to be a scientific concept. Because of the important role it plays in the areas we are dealing with, a note on its origin and function is in order. The principle is named after Nicolaus Copernicus, a Polish cleric, mathematician and astronomer, who began the process of the earth’s removal from the cosmic centre by proposing (in 1543) the

replacement of the ancient earth-centred model by a sun-centred one.

The earth-centred model (the so-called Ptolemaic World System) had been inherited from the Greeks and still served the Middle Ages (about 500-1500). It consisted of a central stationary earth with the “heavenly bodies” – sun, moon, and planets – revolving around it (see picture on this page). The Christian Middle Ages liked this model, which was in a number of ways in accordance with their general worldview. The earth’s location at the centre symbolized man’s special status as the creature made in God’s image, while the fact that it was also at the lowest point in the system symbolized his fallenness. The Middle Ages further liked the hierarchical nature of the cosmos and the fact that the heavens surrounded the earth. This made manifest God’s unceasing supervision and providence and protection. Medieval people could feel at home in the universe. Space did not terrify them, nor did it convey a sense of cosmic loneliness, as it so often does today. There was no empty space.

The old model had not only a religious but also a scientific function and served, among other things, to predict eclipses. As a scientific model it had its weaknesses, however. A major setback was the difficulty it posed in explaining the apparently erratic orbits of the planets. Copernicus found that the problem could be removed if the model was changed from an earth-centred to a sun-centred one. That solution was not immediately accepted. The idea of a central sun and a moving earth went against common sense and, according to many, also against the Bible. Had not Joshua ordered the sun and not the earth to stand still? Various scientists, however, continued Copernicus’ work and by the late 1600s the sun-centred model had become the accepted one.

The process of our “dethronement”

Although the new model removed the earth from its central place, it did not immediately affect the belief in the earth’s and man’s special status. Most early scientists, including Copernicus himself, were Christians. They saw their work not as an attack upon Scripture but as a means to glorify the Creator by showing the magnitude and order of the universe. They also continued to see humanity as God’s special creation, made in his image. Even when in the eighteenth century (the so-called Enlightenment or Age of Reason) this biblical faith declined, the belief in the superior status of the human race continued, thanks to the predominantly humanistic worldview of that period.

The situation began to change in the nineteenth century, when among several thinkers the deism of the Enlightenment was replaced by atheism. It is true that the Copernican Principle of mediocrity was not promoted as a scientific tool until the twentieth century, but the preceding age set the stage. Friedrich Nietzsche (1844-1900), the century’s foremost “death-of-God” philosopher, wrote:

Has not man’s determination to belittle himself developed apace precisely since Copernicus? Alas, his belief that he was unique and irreplaceable in the hierarchy of beings had been shattered for good; he had become an animal, quite literal and without reservations; he who, according to his earlier belief, had been almost

God.... Ever since Copernicus man has been rolling down an incline, faster and faster, away from the centre....

Nietzsche was partly right in blaming the new astronomy for the loss of human self-esteem, but only partly. In the days of Copernicus and his followers opinions were divided. Many rejoiced that the earth had been moved from its lowly place at the bottom and become a “star,” a glorious heavenly body. Others, however, focused on the possible negative implications of the new model, and their number may well have increased over the centuries. But man’s “belittling of himself” has been a result not only of the astronomical discoveries. A more important role has been played by scientific theories that claimed to prove the “death of God” and thereby denied man’s special place in the universe. This was acknowledged by Nietzsche’s younger contemporary Sigmund Freud (1856-1939), who mentioned *Charles Darwin’s* contribution to the marginalization of man. It was Darwin, after all, who had shown that the human species had descended from the animals. Nor was that the end of the process of demotion. It was continued, Freud said, by his own work. His theory of the unconscious showed that the human ego, which had been so highly exalted by both Christians and humanists, was no more than the plaything of irrational desires and instincts. Instead of being made “a little less than God” (Psalm 8), man had become product and part of a non-rational nature.

Our position in space and time

Although Copernicus and his followers had no intention of lowering the status of man and his habitat, developments in astronomy did underline the message of the earth’s relative insignificance. As early as 1609, the scientist Galileo had searched the heavens with the newly invented telescope and discovered that the Milky Way galaxy consisted of an unimaginably large number of stars. This showed that the cosmos was far greater than previously imagined; that it might even be infinite in size. Its inconceivable vastness was confirmed in the twentieth century. In the 1920s the American astronomer Edwin Hubble, using the most advanced telescope then available, discovered that the Milky Way was not unique (as had been thought until that time) but was only one of several galaxies in an expanding universe. Astronomers now estimate that there are at least a hundred billion galaxies, each of them containing billions of stars. The estimated number of stars in all the galaxies of the universe, scientists tell us, “vastly exceeds the number of grains of sand on all the beaches of the world.”

In such a universe, planet earth is no more than a speck, and so indeed is the sun (which has been demoted to an “average” star, one among many, whose apparent brilliance is a result of the fact that it is much nearer to the earth than any other star). As the seventeenth-century poet John Donne already complained, in the new model “The Sun is lost and th’earth, and no man’s wit / can well direct him where to look for it....” Cosmic distances are so great that they have to be measured in light-years – the distance that light can travel within one year, which is close to ten trillion kilometres. The extent of the Milky Way is estimated to be more than 100,000 of such light-years. This means that in order to go from

one end to the other, one would need to travel at the speed of light – which is close to 300,000 kilometre per second – for a period of 100,000 years. (I am assuming here, for simplicity's sake, that we could measure time by an earth-bound clock, although in fact time would greatly change for someone travelling at this speed). By way of comparison: the light of the sun, which is located at a distance of almost 150,000,000 kilometres from the earth, reaches us in about eight minutes. And even the extent of the Milky Way is next to nothing by cosmic standards. In the 1990s astronomers using the Hubble Space Telescope discovered galaxies that they calculated to be up to twelve billion light-years removed in space and time.

If these mind-boggling cosmic distances served to diminish the status of the earth and its inhabitants in the eyes of many, so did new theories of cosmic time. The twentieth century witnessed the birth and triumph of the so-called Big Bang theory of the universe's origin and development. According to this theory the universe was not a few thousand, but billions of years old, and the age of the earth also was much greater than had previously been believed. Even so, the earth was a late-comer. Astronomers date the age of the cosmos at about 14 billion years, that of our galaxy at 10 billion, and that of the earth at 4.5 to 5 billion. The span of humanity's existence was much shorter yet. According to evolutionary scientists the age of the human species is one (or a few) hundred thousand years.

Science or ideology?

The description by modern science of the magnitude of the universe undoubtedly contributes to the widespread belief in the insignificance of the earth and mankind. Does it also, however, justify that belief by *proving* the Copernican Principle of the earth's and man's non-exceptional status? In fact, it does not. The principle implies that location and size determine value, which is obviously untrue. Moreover, some scientists are also challenging the principle's scientific value, pointing out that there are few if any instances where its use has advanced our understanding of the universe. These dissenters further show that recent scientific discoveries not only fail to endorse but actually provide potent disclaimers of the Copernican Principle. The discoveries support the idea that the earth is unique and uniquely fitted for the sustenance of life. We will turn to the arguments and proofs later. The question that now concerns us is why, in spite of its apparently questionable scientific foundations, the Copernican Principle is so strenuously promoted.

One important reason, it appears, is its ideological function – the fact that it provides “scientific” support for the anti-biblical view of man and his world that characterizes our times. The principle is also, as already suggested, grist for the mill of radical ecologists and animal-rights activists, who blame our ecological problems on the belief that we are superior to other species. That belief, they say, is founded on the biblical teaching of man as the head of creation, which is a major cause of the destruction of the world's environment under the leadership of western Christianity.

But if hostile to the Bible, the principle is not opposed to all religion. Radical ecologists

who subscribe to it have no problem advocating pantheism and a variety of neo-pagan religions. This is telling. Atheists may proclaim that we can live without faith in the supernatural, but our postmodern age shows that for many people this is too difficult. Now that faith in the God of Christianity has been declared a delusion, a replacement must be found, and more often than not the universe and the earth are made into a god (or goddess).

The hope of receiving help and guidance from sources beyond the earth is an important element also in the search for extra-terrestrial intelligence, which, as we will see, has been greatly stimulated by the Copernican Principle. We will turn to that topic in the next instalment.