

EDITORIAL

DEUS EX MACHINA

Well over a century ago, some were of the opinion that only God could create organic compounds such as sugars, proteins, urea, etc. These molecules, which are comparatively complex, were usually associated with living organisms and the mystery of life. Since that time, many thousands of different organic compounds have been synthesized, and God is no longer considered necessary for this process. In the cosmic realm, Sir Isaac Newton thought that God would have to occasionally adjust the universe to keep it operating properly. This idea is no longer taken seriously.

God has been used and abused in many ways. Centuries ago He was thought to have created bedbugs to keep people from sleeping too much, and mice were thought to have been created to teach man to put food away. These ideas have also been discarded. As science has advanced, the need for God as an explanatory factor has decreased, and some now suggest that even if He exists, He is certainly not necessary. Using God to help whenever difficulties are encountered in explaining nature is often referred to a “god of the gaps,” or “deus ex machina.” The concept is usually treated with disdain, with the implication that whenever there is a problem, God is invoked to solve it; given sufficient time, science will eventually solve the mystery. God should not be used to fill our gaps in information.

Many scientists are also concerned about a powerful God who can manipulate nature at will and thus alter the consistency that makes science possible. In this respect, they see a genuine conflict between God and science. This conflict need not be that severe if, as was believed by the pioneers of modern science, the principles of science were created by God, and nature reflects that consistency. In their thinking, God is the author of the principles and laws of science. God can bypass the laws he has established, but only rarely does He do so. This permits science to work.

“Deus ex machina” is Latin for: “God from the machine.” The term stems from the practice in Greek and Roman drama of having an actor representing God coming out of the sky onto the stage to resolve major difficulties. The effect was accomplished using a crane (the machine); hence, the reference to “God from the machine” concept for resolving scientific difficulties.

While criticism of the “deus ex machina” or “God of the gaps” concept has some validity, to arbitrarily eliminate all of God’s activities in this

way is oversimplistic. One needs to differentiate between the usual God of the gaps and the "God of the necessary gaps."¹ For this latter case, God seems essential. The synthesis of organic compounds mentioned above would fit the "God of the gaps" concept, while the recent advances in molecular biology that make the possibility of the spontaneous origin of living things all the less plausible would support the concept of the God of the necessary gaps. In this case, it appears that God is becoming more essential as we discover more and more complex, programmed biochemical systems such as the immune system or the correcting systems for DNA replication.² How could these complex processing systems originate by themselves without intelligent design? The same can be said for the fine-tuning of the Universe that we are discovering which involves extremely precise values for basic physical factors.³ The universe appears to be balanced on the edge of a knife blade.

One should not use the fact that science has been able to duplicate some phenomena attributable to God as an excuse to eliminate God altogether, especially as we find nature to be more and more complicated and exact. God seems more necessary now than ever before.

Ariel A. Roth

ENDNOTES

1. Kenny A. 1987. Reason and religion: essays in philosophical theology. Oxford and NY: Basil Blackwell, p 84.
2. (a) French DL, Laskov R, Scharff MD. 1989. The role of somatic hypermutation in the generation of antibody diversity. *Science* 244:1152-1157; (b) Lambert GR. 1984. Enzymatic editing mechanisms and the origin of biological information transfer. *Journal of Theoretical Biology* 107:187-403; (c) Leder P. 1982. The genetics of antibody diversity. *Scientific American* 246(5):102-115; (d) Modrich P. 1991. Mechanisms and biological effects of mismatch repair. *Annual Review of Genetics* 25:229-253.
3. (a) Barrow JD, Tipler FJ. 1986. The anthropic cosmological principle. Oxford: Clarendon Press, and NY: Oxford University Press; (b) Carr JB, Rees MJ. 1979. The anthropic principle and the structure of the physical world. *Nature* 278:605-612; (c) Davies PCW. 1982. The accidental universe. Cambridge: Cambridge University Press, p 88-93; (d) Hawking SW. 1988. A brief history of time: from Big Bang to black holes. NY and London: Bantam Books, p 121-122; (e) Leslie J. 1988. How to draw conclusions from a fine-tuned cosmos. In: Russell RJ, Stoeger WR, Coyne GV, editors. *Physics, Philosophy, and Theology: A Common Quest for Understanding*. Vatican City: Vatican Observatory, p 297-311.