

Mathematics and Religion (2010) by Javier Leach

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With the theory of systems, we have found a new ontology—a new theory of existence, that is—that allows us to continue to seek unity among the scientific disciplines. The ontology of system can be written in a formal language so that it can be understood by a computer as well. However, an open system always defies complete control and resolution, and so it always puts limits on the languages of mathematics and science. In an age of open systems, we are still forced—and perhaps asked more than ever—to ponder metaphysical questions.

Dfn. metaphysics: philosophy dealing w/
first principles, such as being, knowing,
THEOLOGY IN A SCIENTIFIC CULTURE *causa,*
identity, time, & space.

The openness of mathematics and science is good news for the language of metaphysics, religion, and faith. Mathematics and natural science must begin with an assumption, and it is an assumption they choose. That is to say, both disciplines put a certain faith in their assumption and then work outward from that (which we typically call “deduction,” and is especially characteristic of logic and mathematics). The process is not too different in metaphysics, which includes religion. The medieval scholastics defined theology as *fides quaerens intellectum*, “faith seeking understanding.” Similarly, we could say that modern science is *perceptio metodica quaerens intellectum*, or “perception and method seeking understanding.” Faith (*fides*) and perception (*perceptio metodica*) are parallel experimental ways of obtaining knowledge of human experience, nature, and history.

Science takes in reality through methodical observation. Theology takes in reality through faith. In both cases, the human mind seeks to understand through formulation in a language and the logical structuring of the language. Scientific theories and theological theories are both produced with the common instruments of language and logic. Currently humanity finds many answers in science that our ancestors searched for, and resolved, in religion. This has allowed modern faith to free itself from preoccupations with phys-

ical science, a topic that is often not relevant for, or even alien to, what the faith experience is all about.

In the meantime, the languages of science and metaphysics can be transcultural. They can speak to all people despite the barriers of our different natural languages. In science, it is the language of $2 + 2 = 4$ or the laws of gravity. In metaphysics and religion, it is the language of absolute reality, such as a transcendent Creator or principle. The idea of God may be expressed within the context of a culture, but in principle, that culture cannot limit such ideas to exclude other human beings who intuit the same higher reality. What is more, in most of our religious traditions, we believe that the Creator reveals this intuitive knowledge to all men and women. For the believer especially, God is seen as actively present in the world. The life of the believer can become a response to a sense that life is a gift, not just a deduction.

Science and religion have shaped our cultures. Our current challenge is to keep a discussion going on between these different kinds of perceptions and languages. Indeed, the history of Christianity (and Judaism and Islam, for that matter) can be viewed as a series of responses to scientific cultures over the ages, from the Hellenistic time through the Enlightenment up to the present age of quantum physics. Christianity today grapples with these same challenges on the scale of a global scientific-technical culture. The challenge, stated by many modern thinkers, was well articulated by Pope John Paul II in a 1988 letter to the director of the Vatican Observatory, George V. Coyne, SJ:

← the author is a mathematician and Jesuit priest.

The hylomorphism of the natural philosophy of Aristotle, for example, was adopted by medieval theologians in order to use it in the examination of the nature of the sacraments and the hypostatic union. This did not mean that the Church judged the truth or falseness of the Aristotelian conception as this is not its concern. It meant that this was one of the grand conceptions offered by Greek classical hylomorphism: doctrine that physical objects result from the combination of matter & form.

culture, which needed to be understood, taken seriously and its value to illuminate several areas of theology verified. Today theologians could ask whether they have carried out this extraordinarily difficult process as regards science, philosophy and other areas of contemporary human knowledge with the perfection with which the medieval masters did so.

In the past, religions tended to be limited by culture, exposed to only a single culture's internal scientific and philosophical worldview. Now, every religion faces a global scientific-technical culture. This gives an important role to the great religions—such as Judaism, Christianity, Buddhism, and Islam—to understand each other and to adapt themselves as metaphysical options to a scientific age.

A primary way to do this is for the great religions to stay conversant with scientific language, which helps them share scientific culture as well. Religions can do this quite safely by recognizing that faith cannot be deduced from empirical knowledge. To quote Augustine, the transcendent cannot be deduced from the immanent (*"Si comprehendis non est Deus"*). In effect, the silence of scientific language toward the God question helps purify religious faith, allowing the believer to find harmony between the laws of the world and the presence of a Creator.

Of course, voices in history have declared that science and religion, because they have opposing perceptions and language, are in mortal conflict. As this book has tried to show, the warring ramparts are not as firm as either science or religion, in their more dogmatic eras, once had believed. The world and its natural systems are open, and the transcendent is a logical conclusion we can draw from our consistency of thought. Mathematics and science try to answer how things are. Metaphysics and religion try to answer why the world is the way it is. We are wise to realize that these questions complement each other, which encourages the delight and curios-

ity we feel about life. I cannot ask why I am in the world if I am not interested in knowing how I am in the world.

A central argument of this book is that the language of mathematics holds a privileged status in human affairs. It is a kind of public language that allows us, as best we can, to try to achieve objectivity and certainty. It is more than that as well. Mathematics manifests its knowledge between the extremes of the absolute and nothing. It helps us navigate between the tendency to be subjective or nihilistic, and our tendency to be overconfident and dogmatic. Mathematics shows us that there are certainties—including a kind of logic that makes our natural languages possible—but there also is incompleteness and openness.

For absolute knowledge we must turn to metaphysics and its particular language of symbols in the context of tradition and community. The very fact that this search continues illustrates a kind of sublime, disinterested, and universal consistency in the human mind. This was what prompted some philosophers of the past (in the ontological argument) to try to prove God's very existence by logic. We do not need to go that far today; it is enough to acknowledge the consistency of our logical search.

Defn. Ontology: a branch of metaphysics dealing with the nature of being.

RECONCILING THE "MAGISTERIUM" OF SCIENCE AND RELIGION

As a final reflection, I would like to draw on some of the resources of my own tradition of Catholic thought. In that long tradition, we have spoken of the deposit of faith and truth, conveyed by the church in councils, documents, and wisdom, as "the magisterium." It is popularly called the teaching authority of the church. Not long ago, this topic gained wide attention through the writings of the noted American paleontologist Stephen Jay Gould.

In the 1980s, Gould had been invited to Rome for a conference on science organized by the Pontifical Academy of Sciences. He was apparently taken by the idea of a magisterium, or teaching