European Journal of Science and Theology, June 2005, Vol.1, No.2, 1-5

EDITORIAL

The Legacy of John Paul II on Science and Theology

The passing of Pope John Paul II requires an appreciation for the legacy he bequeathed both the church and the wider society concerning the relation between science and theology. John Paul is arguably the most widely known pontiff in the history of the church, and one of the most authoritative moral voices in the history of Christianity. His media savvy, commitment to travel, mastery of the silent gesture, and charismatic presence combined to spread his message throughout the globe. He is known world-wide as the preeminent spokesman for human rights, the constructor of a bridge between Christianity and Judaism, an advocate for inter-religious prayer in search of peace, a critic of capitalism as well as communism, and as a man of deep prayer, moral self-discipline and visionary hope. The pope is also known as a teacher of strict Christian morality who objects to the materialism and secularism of modern societies. This moral objection includes a rejection of many forms of biomedical technology, either those like stem cell research and in vitro fertilization, that are actually possible today or those like human cloning or forms of germ-line genetic engineering that might be possible in the future. Some observers conclude from this moral stance that the pope is anti-science and anti-technology and that he views theology as essentially suspicious of science and technology. It will come as a surprise to them to hear that John Paul II developed an essentially harmonizing approach to the relation between two forms of human intellectual activity.

Pope John Paul II wrote more than any of his papal predecessors on the relation of science to theology, and on related matters such as the life of the church, Christian faith, and morality. We can mention three papal texts help to illumine three aspects of his central stance toward the relation between science and theology: he affirmed the value of the natural sciences in their own right, he warned against their reductionistic misuses, and especially those that, in one way or another, diminish or undercut human dignity, and he insisted that the knowledge produced by the sciences be used for the common good rather than the private good of individuals or selected groups within society.

The first document we have to consider in John Paul II's, "Lessons of the Galileo Case," his address to the Pontifical Academy of Sciences, October 31, 1992 [1]. John Paul's first address to the Pontifical Academy of Sciences cited an important principle affirmed in one of the key documents of the Second Vatican Council: "We cannot but deplore certain attitudes which have existed among Christians themselves, insufficiently attentive to the legitimate autonomy of science. Sources of tensions and conflicts, they have lead many minds to conclude that faith and science are mutually opposed."[2] At this meeting in

1979, he announced his sense that the church needed to examine the Galileo case with an eye to overcoming the impression that faith is antagonistic to science and to pursue instead an approach aimed at "fruitful concord." [3] The study commission set up by the pope in 1981 to examine this case concluded that the crisis occurred in part because of the failure of theologians to adequate acknowledge the non-literal meaning of Scriptural accounts of the structure of the universe. John Paul II acknowledged ways in which Galileo led the Church to a more adequate approach to Scriptural interpretation, and especially underscored the need to distinguish the empirical data and the theoretical framework of the sciences from the religious and theological significance examined in theology. As the pope put it in what is his best discussion of the science-religion relation, "Both religion and science must preserve their own autonomy and their distinctiveness. Religion is not founded on science nor is science an extension of religion. Each should possess its own principles, its pattern of procedures, its diversities of interpretation and its own conclusions. ... While each can and should support the other as distinct dimensions of a common human culture, neither ought to assume that it forms a necessary premise for the other." [4]

The second document we need to consult is the statement on evolution presented to the Pontifical Academy of Sciences on October 22, 1996 [5]. Whereas the Galileo statement showed a courage to confront the past oversights and mistakes of the church, this statement struck many observers as equally courageous in its undisturbed endorsement of the evolutionary origins of the human race. Since "truth cannot conflict with truth,"[5] the pope reasoned, the findings of the biological sciences cannot conflict with the truth revealed in the gospel. The pope acknowledged that contemporary scientific research from a variety of disciplines shows that evolution is more than a "hypothesis," [5] and he insisted that the church not maintain any wall between science and theology or suggest that faith is opposed to scientific knowledge. This position seems unobjectionable and even unavoidable, but on the popular level many (and worldwide perhaps even most) Catholics continue to presume the historical accuracy of the Genesis accounts of the creation of Adam and Eve. While on the moral level seeking a rapprochement with conservative evangelical Christians on controversial social issues, the pope's acceptance of evolution implicitly called into question the adequacy of the literalistic reading of Biblical texts of creation often uncritically presupposed by both Catholic and Protestant believers.

John Paul made it clear that the church's central concern is not with the scientifically examined details of theory of evolution but rather with the religious and moral implications that are drawn from it and the epistemological contexts within which it has been interpreted. The pope in fact recognized that there are "theories" of evolution, some of which are deeply influenced by philosophical assumptions that need to be examined. Deeply impressed with the ideological misuses of Darwinism in the nineteenth and twentieth centuries, the pope warned against interpreting evolution through the lens of epistemological and ontological reductionisms that inevitably eliminate the dignity of the human

person. The moral imperative to support the dignity of the person is supported by the religious doctrine that God directly creates each human soul. Each person as a social being is called into community and is responsible for the common good; we are not simply atomistic individuals driven by "selfish genes" in an endless round of ruthless competition with one another. While valuable in itself and regnant in its own limited domain, evolutionary biology and the allied sciences cannot encompass the entire scope of what is meaningfully human. Human experience examined philosophically testifies to the significance of "self-awareness and self-reflection, of moral consciousness, freedom, or again, of aesthetic and religious experience, falls within the competence of philosophical analysis and reflection, while theology brings out its ultimate meaning according to the Creator's plans." [5] Failure to account for the distinctively spiritual dimension of human experience leads to de-humanizing policies and attitudes of the sort seen in support for euthanasia, cloning, and abortion.

The dignity of the person cannot be founded on science alone, and attempts to use science to undercut human dignity are based on distorted philosophical systems. Human dignity also provides moral limits to the use of technology in reproduction, ecology, and other domains of human action. Science and religion are thus ultimately in harmony, John Paul II taught, but the latter generates the moral and theological vision for the proper interpretation of the authentically human meaning of scientific work.

This theme is underscored in a third document, the pope's speech of November 11, 2000, on the "Jubilee of the Agricultural World" addressed to Italian farmers [6]. The pope began with a traditional acknowledgement that farmers have the task of helpful the natural world to be "fruitful" so that it can meet human needs. Aware of the terrible toil taken on the earth my industrial agriculture, the pope registered the need to address the more and more powerful effects of an increasingly "globalised" economy on the natural world. Though the church does not have the competence to propose technical solutions to these challenges, he noted, she does have the responsibility of calling to mind the "Gospel witness" and "spiritual values" to all human problems and deliberation over their practical solutions [6, p. 112].

The Gospel teaches that the earth is the Creator's and is not to be used recklessly by human beings; we are entrusted to use the earth but not to abuse it. This means that the employment of biotechnologies cannot be pursued solely or even primarily in light of short-term economic interests. The products of agricultural enterprises, moreover, must be distributed in light of the principle of the "universal destination of the earth's goods." [6, p. 113] Since the land is given by the Creator so that the needs of all people can be met, the right to make a reasonable financial profit must both be conceived in light of the "social function" of private property. Here John Paul II shows that the ongoing dialogue between theology and science must take into account not only the arguments of academics but also the needs of the vast numbers of the poor who live with malnourishment and hunger.

The solution to this problem must draw from the best insights of the sciences but it will never be addressed adequately unless we also acknowledge its moral, political, and religious dimensions, and especially through the cultivation of the virtue of solidarity and a commitment to "human ecology." Instead of a purely technical solution to the ecological crisis, we need to curtail excessive consumption that is driven by an "irrational consumerism" and a "culture of waste." [6, p. 114] The pope gave neither blanket approval nor blanket condemnation of genetically modified foods. He issued a general appreciation of the value of technology and reminded the farmers that their tradition allowed for opening themselves "to the all the developments of the technological era." At the same time, he was mindful of the moral boundaries to such openness and thanked them for "safeguarding the perennial values that characterize" their important enterprise.

The basic principle's of John Paul II's approach to genetically modified foods follows from this framework. Human reason is a gift and ought to be used for the common good. World hunger is not solely a scientific or technological problem, but scientists ought to do what they can, within moral limits, to use their knowledge and skills to address this problem. The evolved structures of natural organisms are not sacrosanct and therefore inherently off limits to human investigation and manipulation. Instead of a simple endorsement of all GMOs or a complete ban of all GMOs, the pope suggests that scientific research and technological developments should be examined on a case-by-case basis in light of the likely impact of particular organisms on human beings, other organisms, habitats, or other aspects of the natural world. Much more study is needed in this area but, given the pope's understanding of the relation between science and theology, there is no need to think that any and all forms of scientific intervention into the genetic structure of various foods is "intrinsically evil." Following this line of thought, the Vatican on August 2, 2003 described genetically modified foods as a "blessing" for a world in which 23,000 people perish every day from starvation.

John Paul II provided a classically Catholic position on the relation between theology and science in the context of the late twentieth and early twenty-first centuries. The natural sciences have their own proper independence and must be distinguished from theology and revelation. As he noted in his 1998 encyclical *Fides et Ratio*, "Saint Albert the Great and Saint Thomas were the first to recognize the autonomy which philosophy and the sciences needed if they were to perform well in their respective fields of research." [7] At the same time, theology must be in dialogue with the sciences in order to be informed by the best knowledge available regarding human behaviour and the structures of nature. In this the pope builds on the Second Vatican Council's encouragement to theology to take seriously the findings of the sciences [2, ns. 57, 62]. Science and theology are sets of disciplines with their own integrity and distinctive methodologies, but the latter can draw insight from the former. Theology performs a valuable service to the human race by calling to mind the limits of

science and by resisting any attempt to allow science to be used in ways that dominate human beings or undermine human dignity [7, no. 88].

Pope John Paul II leaves a rich and complex legacy that we can continue to explore and build upon in the years ahead. One can hope that continued efforts to build bridges between science and theology will bear the kind of fruit that he so ardently desired.

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References

[1] John Paul II, Origins, **22** (1992) 371.
[2] Paul VI, *Gaudium et spes*, Pastoral Constitution of the Church in the Modern World, Libreria Editrice Vaticana, Vatican, 1965, no. 32.
[3] John Paul II, Origins, **9** (1979) 391.
[4] John Paul II, Origins, **18** (1988) 377.
[5] John Paul II, Origins, **26** (1996) 349.
[6] John Paul II, *Jubilee of the Agricultural World*, in *Genetically Modified Foods: Debating Biotechnology,* M. Ruse and D. Castle (eds.), Prometheus Books, Amherst, New York, 2002, 111.
[7] John Paul II, *Fides et ratio*, Encyclical letter, Libreria Editrice Vaticana, Vatican 1998, no. 45.

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