Science in Pastoral Ministry[1]

By
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The charge of the parish pastor is threefold: *Preaching*, *Teaching*, and *Counseling*, or, pastoral care. Of course, there is more to the weekly ministry than these three alone. Preaching takes place within a planned worship setting with liturgy and the celebration of the sacraments. Teaching involves administering a Christian education program and overseeing Bible studies. And counseling is only the core of conversation taking place during hospital visitation, home visitation, and numerous other opportunities for inter-personal engagement. A faithful pastor finds precious little time to stop, read, think, meditate, pray, and discern. Yet, this is the inescapable lot for those who feel they have been called by the Holy Spirit to ordained service.

The worldwide dialogue taking place between natural scientists and Christian theologians as well as intellectual leaders in many of our world's religions may appear to the parish pastor like an ivory tower luxury. Dialogue for the purpose of exploring ideas, searching for overlaps and connections between one's faith in God and the scientific understanding of the natural world, look to the busy pastor like a leisure time activity. It looks like armchair speculation. No parish pastor beset with the burdens of an already impossible schedule, it seems, could justify taking the time to indulge in such a speculative enterprise.

Yet, the revolutionary new rapprochement between science and theology provides the parish pastor with a treasure chest of intellectual jewels that could enrich his or her preaching, teaching, and perhaps even counseling ministries. To leave this treasure chest unopened would be to deny oneself a wealth of resources for parish ministry. In what follows, we will identify some areas of the new dialogue between science and theology that could definitely enhance the effectiveness of preaching and teaching, if not counseling and pastoral care as well.

We will first look at pastoral hermeneutics, which includes the prophetic and constructive tasks of biblical preaching. We will then review eight different models of understanding the relationship between science and faith, half that draw upon the image of warfare and half which advocate peaceful cooperation. We will give special attention to the controversy surrounding Darwinian evolution. Finally, we will turn to the frontier of genetic research and the ethical issues surrounding the phrase "playing God," recommending that the pastor demythologize science while appropriating science to a theological understanding of the world in which we live.

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Pastoral Hermeneutics

Why might interest in modern science be of value to the parish preacher or teacher or counselor? After all, the task of a church leader is to interpret the Bible, not natural science. Yet, the interpretation of the Holy Scriptures on behalf of listening ears in the context of the modern world requires attention to the modern worldview, which has been determined primarily and extensively by natural science.

Yes, interpreting the Bible is what distinguishes the work of the Christian parish pastor. Yet, the dialogue with natural science can aid the pastor in this task of interpretation, first and foremost in preaching. The preacher will need to deal with science on two fronts: first critically as a myth to be transcended by the proclamation of the gospel; and, second, as an essential component in post-critical worldview construction.

To proclaim the Word of God in the sermon in such a manner that it becomes the Word of *God* and not merely that of the preacher is the unenviable charge to the conscientious pastor. "When the Gospel is preached, God speaks," wrote Karl Barth (Barth, 12); and the presence of the Word of God makes the pulpit a sacred and awesome place. In order to help insure that the Word of God comes through with impact, the pastor in the pulpit needs to attend to two contradictory or paradoxical thrusts within the sermon's structure, worldview-deconstruction and worldview-construction. The first is prophetic; the second is pastoral. The first is critical; the second is post-critical. Let us start by saying a few things about the critical task of worldview-deconstruction.

God is not of this world. God transcends this world. This does not mean that God is distant; it means that God cannot be controlled by anything we do or anything we think. God cannot be subordinated to anything we believe or imagine. God comes to us from outside our imaginations, challenging and cracking through our previously accepted understandings of ourselves and our world. To proclaim the gospel as God's Word, the preacher needs to challenge our this-worldly assumptions and loyalties so that we can open ourselves to a message that comes from beyond.

Cultures and individuals construct in their imaginations worldviews or pictures of reality that include the whole world and themselves in it. Such views of reality provide the conceptual framework within which we understand our place in an otherwise immense and mysterious cosmos. Yet the God who revealed himself to the people of ancient Israel is simply not of this world. The God of the first commandment—make no images!—transcends all of our images of God. To proclaim the Word of God includes smashing our understanding of how the world works in order to reveal a higher reality, God. The preacher by example and by message needs to communicate to his or her listeners: don't trust what you imagine the world to be like; trust God instead.

During the central third of the twentieth century when neo-orthodox and existentialist theology reigned, most theologians referred to this as preaching the "kerygma" or preaching the gospel, accompanied by "demythologizing." 'Demythologizing' was (and still is) an important term. It did not mean eliminating the Bible's mythological worldview and replacing it with a scientific worldview. Rather, it meant interpreting the message of Jesus Christ distinguishable from any worldview.

Rudolf Bultmann wrote, "Its [*de-mythologizing*] aim is not to eliminate the mythological statements but to interpret them. It is a method of hermeneutics" (Bultmann, 18).

For this discussion, the word 'myth' is nearly equivalent to 'worldview'. The prophetic task or critical task of the preacher is to break through all worldviews in order for the kerygma to call listeners to personal trust in God, trust in the God who transcends this world and transcends our imagination of how this world works. Preaching consists of a call to faith, with faith understood as existential trust in a God who remained mysterious and unknowable, even if trustworthy. By 'world" we mean our worldview or world of meaning, *Weltanschauung*. This needs to be destroyed, or in postmodern terms "deconstructed," so that our attention can be drawn toward the divine grace that comes to us from beyond the world. The preacher would enter the pulpit ready to smash idols—that is, to critically dismember idols in the form of ideas or concepts or beliefs about how the world works. In radical obedience to the First Commandment against graven images, the preacher would proclaim that God comes from beyond all our mental images of this world and confronts us with the decision to either have faith in the transcendent or continue to rely idolatrously upon our this-worldly imagination.

World-destruction is the prophetic task of the preacher. What I here call the *prophetic* task is built on Paul Tillich's "Protestant principle," which "emphasizes the infinite distance between God and man" (Tillich, 68). By criticizing, challenging, and deconstructing the worldview within which we live, the preacher would call us to faith in the infinitely transcendent God who has revealed the Godself as gracious in the cross of Jesus Christ. The limit to this prophetic preaching task is that it cannot on its own tell us how to live in this world, even if it is a world partially constructed by the human imagination. Human beings cannot live on a day to day basis on prophetic preaching alone. Criticism is not enough. We all need to envision ourselves within a world that is packed with meaning, existential meaning. This leads to the second of the preacher's tasks, namely, to construct a worldview where all things are oriented around the God of grace. This is the pastoral element in the sermon.

Since the days of St. Thomas Aquinas, the job of the systematic theologian has been to describe all things in the world in light of their relationship to God. This is the job of the contemporary preacher (and teacher) as well as the theologian. The meaningfulness of the life of every person sitting in a church pew is conditioned by the picture of the world that the preacher paints. The preacher is charged with the task of painting a picture of reality that orients all things to the God who transcends all things. This is a most difficult task, to be sure; yet nothing less is demanded.

Once the preacher has called us out of the world to listen to the eternal kerygma or Word of God, then the preacher turns around and calls us back into the world with a new orientation. Our response to the gospel re-orients our understanding of ourselves and of the world within which we live. This happens, whether the preacher is aware of it or not. It is better to be aware.

Implicit in the sentences and metaphors and images and allusions the preacher employs in the sermon is a description of a single comprehensive reality in which both the listener and God are components. This is as important as it is inescapable. The verbal pictures of the world the preacher draws are the primary vehicle for evoking a sense of meaning, of belonging, of orientation, of welcome, of acceptance.

Hermeneutical philosophers such as Hans Georg Gadamer remind us of the constant dialectic of what is said and what is unsaid (Gadamer, 469). Whatever we say, *das Gesagte,* is always accompanied by a context of what is unsaid, *das Ungesagte*. No matter what the focus of the sermon, the frame is co-present. No matter what act takes center stage, the backdrop is co-present. No matter what the theme, the context is co-present. The comprehensive picture of reality or worldview of the preacher is inescapably co-present with every emphasis or point or theme. What the conscientious preacher needs to do is give reflective attention to the horizon of the unsaid, to the worldview that he or she wants to accompany the kerygma.

Language and worldview belong together. "The gospel does bring change and resulting *challenge*, yet the way we language that *challenge* from the pulpit determines a great deal. The language choices preachers make influence the theological understandings with which hearers leave" (Rogers, 270; Rogers' italics).

Our concern here is this: what role does modern science play in structuring the worldview and the language that frames the sermon? Note what is not being said here. Our concern is not to demand that modern science provides the content of the sermon. The kerygma or gospel provides the central content. The role that science plays is found in the framing worldview, whether to be prophetically demythologized or to become a component in worldview reconstruction.

Science is an unavoidable factor in describing persuasively to virtually all modern people just how our world works. It is with this in mind that Philip Clayton writes while discussing physical causality, "Remember that the question is not how to *prove* that God is active in the world at particular moments, but rather how to think this possibility in a manner that does not conflict with what we now know of the world" (Clayton, 193; Clayton's italics).

Science is the reigning myth, so to speak. Science sets the standards for credibility. No one can live with a sense of truthfulness in a worldview that is irreconcilable with the picture of nature drawn by physicists, chemists, biologists, and ecologists. Whatever the preacher assumes at the level of the unsaid will become implicitly audible to his or her listeners; and if it is irreconcilable with science the credibility of everything the preacher says will be unnecessarily doubted.

The Warfare Worldview

Worldview construction will include two overlapping but distinguishable components: the realm of nature and the realm of science. Science is one way to interpret nature; it is distinguishable from nature and worthy of analysis in its own right. In this section we will ask: just how might the parish pastor include natural science in the worldview he or she seeks to construct?

This larger question is prompted by a set of smaller questions: do we want to perpetuate the widespread belief that science and faith are at war with one another? Do we want people of faith to fear the sciences as threats to religious belief? Do we want members of congregations to suspect that the scientists who are also members may be secretly committed to atheism? Do we want our young people considering a future career to eschew studying science out of the fear that it may be of the Devil?

To address these questions directly or indirectly in preaching and teaching will require on the part of the parish pastor or priest at least a modicum of sophistication regarding just how science and religion in fact relate to one another. Surprisingly, multiple ways of construing the relationship between science and faith make up the currency of today's idea exchange. Here we will look at eight models or patterns of interaction between science and faith, suggesting directions for pastoral assessment and employment (Peters, 2003, Chapter One).

Four Warfare Models

The first four models fit the widespread belief—myth, if you will—that science and faith are at war. The first model is *Scientism*. In the contemporary West, the term *scientism* refers to naturalism, reductionism, or secular humanism—that is, the belief that there exists only one reality, namely, the material world. Further, science provides the only trustworthy method for gaining knowledge about this material reality. Science has an exhaustive monopoly on knowledge. It judges all claims by religion to have knowledge of supernatural realities as fictions, as pseudo-knowledge. All explanations are reducible to secularized material explanations. According to this model, religion loses the war by being declared false knowledge.

Peter Atkins, an Oxford chemistry professor, represents the position. "My conclusion is stark and uncompromising. Religion is the antithesis of science; science is competent to illuminate all the deep questions of existence, and does so in a manner that makes full use of, and respects the human intellect. I see neither need nor sign of any future reconciliation" (Atkins).

Against scientism, the preacher needs to speak critically and prophetically. The world of scientism is a sealed off natural world that has closed its doors and windows to transcendence. Not only is it anti-religious, it only pretends to be scientific. Actual science as a research enterprise does not need the ideology of scientism. One can enjoy perfectly good science without adding this ideology of materialism or reductionism. The preacher can help listeners to distinguish between healthy science and unhealthy scientism.

The second model on our list is *scientific imperialism*, a close ally of scientism. Scientific imperialism does not outrightly dismiss religion. Rather, it uses materialist reductionism to explain religious experience and reassess theological claims. Scientific imperialists grant value to religion and religious contributions to society. They may even grant the existence of God. Yet, scientific imperialists claim that science provides a method for discerning religious truth that is superior to that of traditional theology. In contemporary discussion this approach is taken by some physical cosmologists such as Paul Davies or Frank Tipler when explaining creation or eschatology, and by sociobiologists such as E.O. Wilson and Richard Dawkins by proffering a biological explanation for cultural evolution including religion and ethics. Here religion is defeated in the war by conquering and colonizing it.

Scientific imperialism may appear to the preacher like the whore of Babylon. It appears at first to be attractive, because on the face of it scientists say good things about

religion. But its cup of abominations is seductive. Once within its grip, what is precious to the Christian disappears: a transcendent God, an active God, a gracious God, and a God who is capable of redemption. Prophetic critique is called for.

Now we turn to warfare from the point of view of the other army. *Ecclesiastical authoritarianism*, our third model, is what every scientist fears from the church. According to this model, modern science clashes with religious dogma that is authoritatively supported by ecclesiastical fiat, the Bible, or in Islam by the *Qur'an*. The best example is the 1864 *Syllabus of Errors*, promulgated by the Vatican. Here it is asserted that scientific claims must be subject to the authority of divine revelation as the church has discerned it. The Second Vatican Council in 1962-65 reversed this, affirming academic freedom for natural science and other secular disciplines. Ecclesiastical authoritarianism wins the war over science through intellectual intimidation.

The 21st century pastor is not likely to be tempted to defend church dogma against an alleged scientific assault as did the Roman Catholic Church of the 19th century, to be sure. Yet, the integrity of theologically derived truths and observations needs to be explored without the anxiety that science will soon explain all such claims away. The parish leader, in this circumstance, needs to trust the truth—that is, trust that open and fair discussion of any theological idea or any scientific idea will lead eventually to edifying truths and not to any embarrassment for either faith or science. Church teaching situations should embrace an atmosphere of confident openness and exploration.

The War Over Darwinian Evolution

The fourth of our warfare models is the *battle over Darwinian evolution*. The battlefields are churches, public school classrooms, school boards, university lecture halls, and the courts in North America, Australia, and Turkey, with little or no notice in Europe. Before picking sides and leaping into battle with guns blazing, the pastor should pause to see who is fighting with whom about what? So, we will pause here to provide more detail than we have for the other models.

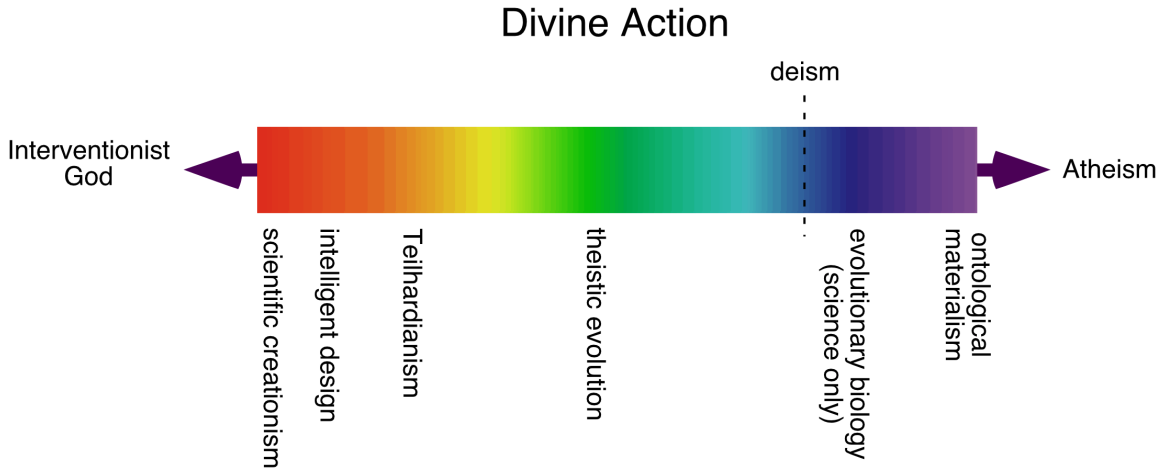
Five positions are discernable, making it much more complicated than the image of a simple war between science and religion might connote. The first position would be that of *evolutionary biology strictly as science* without any attached ideological commitments. The reigning theory is neo-Darwinian. Neo-Darwinism combines Charles Darwin's original nineteenth-century concept of natural selection with the twentieth-century concept of genetic mutation to explain the development of new species over 3.8 billion years. Defenders of quality science education in the public schools most frequently embrace this "science alone" approach.

The second position combines neo-Darwinism with the scientism mentioned above to formulate a *materialist ideology*. This ideology includes repudiation of any divine influence on the course of evolutionary development. Spokespersons for s*ociobiology*, such as E. O. Wilson or Richard Dawkins, are aggressive and vociferous. Evolution here provides apparent scientific justification for scientism, scientific imperialism, and in some cases belligerent atheism. Charles Darwin himself did not draw atheistic implications from his science, writing, "My views are not at all necessarily

atheistical" (Darwin, 2:312). But, his disciples do. Harvard geneticist Richard Lewontin contends that '*Science*, as the only begetter of truth….Materialism is absolute, for we cannot allow a Divine Foot in the door"(Lewontin).

The third position is *scientific creationism*. During the fundamentalist era of the 1920s, biblical creationists appealed to the authority of the Bible to combat the rise in influence of Darwinism. Since the 1960s, creationists have based their arguments not on biblical authority but rather on counter science—hence their label, *scientific creationists.* They argue, for example, that the fossil record will contradict standard appeals to natural selection over long periods of time. Those known as young earth creationists, such as the leaders of the Institute for Creation Research near San Diego, California, hold that the planet earth is less than ten thousand years old and that all species of plants and animals were originally created by God in their present form. They deny macroevolution—that is, they deny that one species has evolved from prior species; although they affirm microevolution—that is, evolution within a species. Key here is that creationists justify their arguments on scientific grounds. "Creation is true, evolution is false, and real science confirms this" writes Henry Morris (Morris, 308-309).

The fourth position is *Intelligent Design.* Advocates of Intelligent Design sharply attack neo-Darwinian theory for overstating the role of natural selection in species formation. They argue that slow incremental changes due to mutations are insufficient to explain the emergence of new and more complex biological systems. Many of the life forms that have evolved are irreducibly complex, and this counts as evidence that they have been intelligently designed. Intelligent Design scholars such as Michael Behe, Philip Johnson, and William Dembski posit that appeal to a transcendent designer is necessary for the theory of evolution to successfully explain the development of life forms. Here scientific questions lead to theological answers.



The fifth position is *theistic evolution*, according to which God employs evolutionary processes over deep time to bring about the human race and perhaps even carry the natural world to a redemptive future. Theistic evolution first appeared in the late nineteenth and early twentieth centuries, even in the work of conservative Princeton theologian B. B. Warfield, for whom God's *concursus* with nature brought about the

human race, just as God's *concursus* wrote the Scripture with human minds and hands. Teilhard de Chardin is perhaps best known for his evolutionary cosmology directed by God toward a future "Point Omega." Among contemporary scholars at work in the field of science and religion, the roster of theistic evolutionists includes Arthur Peacocke, Philip Hefner, Robert John Russell, Nancey Murphy, Kenneth Miller, John Haught, Martinez Hewlett, and Howard van Til. This school of thought is not occupied with defending evolution against attacks by advocates of scientific creationism or Intelligent Design; rather, it seeks to work through questions raised by randomness and chance in natural selection in light of divine purposes and ends (Peters and Hewlett, 2003; Russell, et. al., 1998)..

That a war is being fought is clear. However, because the actual points at issue deal specifically with the explanatory adequacy of natural selection, it would be misleading to simply dub this a war between science and religion. We here stress the point that what the parish pastor needs to know is this: despite the fact that superficially this looks like a battle between science and faith, down deep it is not. All combatants revere and respect science. It is in essence a battle over what constitutes good science. A parish leader who views this as a battle of science versus faith and who takes the side of faith does so only at grave peril.

Without being overly formulaic, we might say that the four warfare models just described all deserve a critical deconstruction and a prophetic warning. Each is misleading to a person of faith. The preacher needs to guard against any of them gaining tacit endorsement in his or her world of the unsaid. Each may from time to time deserve focused attention and critique.

Four Non-Warfare Models

We have just reviewed four ways of understanding the relationship between science and faith in terms of warfare: scientism, scientific imperialism, ecclesiastical authoritarianism, and the battle over evolution. But, warfare is not the only lens through which to look at this relationship. In fact, the image of warfare could be misleading. "An image of perennial conflict between science and religion is inappropriate as a guiding principle" writes John Hedley Brooke (Brooke, 33). In the contemporary globe wide conversations between scientists and religious thinkers, at least four non-warfare or cooperative models have emerged. Any or all of these could become material for the parish pastor to use in constructing a meaningful worldview that includes modern science.

The first and most widely embraced model for relating science and religion is the *two languages* model. According to this model, science speaks one language, the language of facts, and religion speaks a different language, the language of values. The Two Language model—sometimes referred to as the "independence" model—is the prevailing view of both scientists and theologians in Western and Asian intellectual life. Science attends to objective knowledge about objects in the penultimate realm, whereas religion attends to subjective knowledge about transcendent dimensions of ultimate concern. Modern persons need both, according to Albert Einstein, who claimed the

following: "Science without religion is lame and religion without science is blind" (Einstein, 49). Warfare is avoided by establishing a border and keeping science and faith in their respective territories.

This Two Language model should not be confused with the classic model of the *Two Books*, according to which the book of Scripture and the book of nature each provide an avenue of revelation for God (Hess). The difference is that the Two Books model sees science as revealing truth about God, whereas the Two Language model sees science as revealing truth solely about the created world.

Already many preachers rely on the two language model when expositing biblical texts such as the Genesis creation accounts. After grasping for a few possible connections or crossovers between Genesis and Big Bang cosmology or Darwinian evolution, the preacher typically elects to say that science tells us what happened while the Bible tells us what it means. This is perfectly legitimate. It is safe, and satisfactory. It does not risk losing any credibility. It provides an accessible safety zone within which to present the biblical message unencumbered with otherwise difficult to answer questions.

For many scholars in the dialogue, however, the two languages model for keeping the two independent of one another is inadequate. It is theoretically inadequate, from the point of view of the theologian. The theologian asks: if it is true that the God of Israel is the creator of this world; and if it is true that natural scientists are gaining accurate knowledge of how this world works; then, sooner or later, we would expect to see some convergence or at least consonance between the two domains of knowing.

This leads to the next non-warfare model, *hypothetical consonance*. Going beyond the Two Language view by assuming an overlap between the subject matter of science and the subject matter of faith, *consonance* directs inquiry toward areas of correspondence between what can be said scientifically about the natural world and what can be said theologically about God's creation. Even though consonance seems to arise in some areas, such as the apparent correspondence of Big Bang cosmology with the doctrine of creation out of nothing, consonance has not been fully confirmed in all relevant shared areas. Therefore, the adjective *hypothetical* applies to theology as well as science. The key hypothesis of this model is that there can be only one shared domain of truth regarding the created world, and science at its best and faith at its best both humble themselves before truth. It follows, then, that one should trust that consonance will eventually emerge. Hypothetical consonance provides the basis for what some call "dialogue between science and theology" and others the "creative mutual interaction of science and theology."

This model—hypothetical consonance—leads to two forms of engagement between science and faith. One is *dialogue*, where scientists and theologians simply speak with one another without a preconceived goal regarding shared concerns in a common domain. Both partners assume that some level of consonance is possible, and they are pursuing consonance. The other is *creative mutual interaction*, which is dialogue at a more advanced form. Here the scientists actually try to influence the theological agenda; and theologians actually try to propose fruitful paths for future scientific research. The Center for Theology and the Natural Sciences at the Graduate Theological Union assumes hypothetical consonance and pursues creative mutual interaction.

It is difficult to ask the preacher to engage hypothetical consonance, because so little in the typical sermon is of a hypothetical character. Hypotheses are for scholars who explore new ideas; sermons occasionally though rarely do this. Perhaps what could inform a sermon would be a background of unsaid trust in the truth, trust in the truth wherever it may be found. The sermon could carry the mood that truth, even if unearthed by a scientist, could be celebrated by a person of faith.

The third nonwarfare model and number seven on our comprehensive list is *ethical overlap*. Building on the Two Language model, wherein mutual respect between scientists and religious leaders is affirmed, some express a strong desire for religious cooperation on public policy issues deriving from science and technology. The ecological crisis and human values questions deriving from advances in genetics both enlist creative cooperation.

Pope John XXIII told us in *Paccem in terries* that Roman Catholics could make partners with "all persons of good will" when working for world peace. Working with all persons of good will in the community or around the world—even scientists of good will—to make our planet a better place in every respect ought to be the daily diet of any Christian congregation.

This brings us to the final example on our list, number eight, *New Age spirituality.* Having left the conflict or warfare model behind, synthetic spiritualities, such as those found in the New Age movement, seek to construct a worldview that integrates and harmonizes science with religion. Evolution becomes an overarching concept that incorporates the sense of deep time and imbues the development of a global spiritual consciousness as an evolutionary advance for the cosmos. Many here are prompted by the visionary theology of Teilhard de Chardin, although this Jesuit forerunner could not himself be categorized as New Age. Others in the New Age movement seek to integrate the experience of mystery articulated in Hinduism and Buddhism with advanced discoveries in physics, such as indeterminacy and quantum theory (Peters, 1991).

The metaphysics of New Age will attract some pastors and repel others. Although some Western scientists and many Eastern scientists resonate with New Age spirituality, it is generally held in academic disrepute because it lacks the rigor found in both scientific research and classical Christian theology. Ethical overlap with special emphasis on ecology would be the domain most likely shared by New Agers and Christian pastors.

Warfare Models	Scientism	Scientific Imperialism	Vatican I	Evolution
Non-Warfare Models	Two Languages	Hypothetical Consonance. Dialogue. Creative Mutual Interaction.	Ethics	New Age

The Problem of Scientists Playing God

One dramatic component to the reigning scientific worldview is discernibly mythical, namely, the concept of "playing God." In fact, the concept of playing God is itself a survival of the classical Greek myth of Prometheus. In the modern scientific setting, this myth takes the thinly disguised form of Faust, Frankenstein, or *Jurassic Park*. The parish preacher and teacher needs to be aware of the actual myths within the worldview, so that demythologizing the scientific myth can become part of the hermeneutical process.

Public policy controversies, as we all can see, invoke abhorrence to "playing God." The phrase "playing God" refers to the power that science confers upon the human race to understand and to control the natural world. Even though the phrase, "playing God," is by no means a theological phrase, it sounds like one; and people within the churches will ask about its meaning and significance. The pastor needs to be prepared to answer.

Upon close examination, the widely used phrase "playing God" seems to connote three overlapping meanings. The first meaning is connected to basic scientific research: to play God is to *learn God's awesome secrets.* Some scientific discoveries evoke a sense of awe and wonder over the complexity and majesty of the natural world that the human mind is apprehending. To pursue science is like shining a light into darkness. It makes visible the secrets of nature. It reveals what previously was hidden. It is the revelatory power of science that leads us to think we are gaining godlike knowledge. Few would ask

us to cease our investigation, because "learning for learning's sake" remains the morality of scientific knowledge.

The second meaning of "playing God" is found in the hospital. It connotes that doctors have gained the *power over life and death*. When overwhelmed by a medical emergency, as a patient we feel helpless, totally dependent upon the scientific training and personal skill of the physician attending. The surgeon, and the scientific training he or she has been exposed to in medical school, stands between us and death. Similarly, large scale research programs dedicated to finding a cure for cancer or AIDS provide the larger society with hope in the face of helplessness. Here "playing God" takes on a redemptive or salvific significance. The genre of jokes about doctors who think of themselves as gods reflects the wider anxiety we have over helplessness, combined with our dependence upon doctors and their skills.

When we use "playing God" in this medical sense, we make two assumptions. First, we assume that decisions regarding life and death belong to God's prerogative. The second assumption follows from the first: when we find a human being with the power of life and death, we think of him or her in a godlike role. This provokes additional anxiety. We worry that the person in the godlike role will succumb to the temptation of pride, of hubris. The concept of hubris articulates the more inchoate fear that we will presume too much, overreach ourselves, violate some divinely appointed limit, and reap destruction. Anxiety over hubris marks the overlapping transition from the second to the third use of the phrase "playing God."

The third meaning of "playing God" refers to our ability to *alter life and influence human evolution*. This meaning is best expressed in the story of Frankenstein, the mad scientist who violates an invisible boundary and crosses over into the sacred realm of nature; then nature rises up vengefully and unleashes death dealing chaos. Our society fears the mythical mad scientist, who by violating nature may cause a backlash that will lead to suffering on the part of us all.

We assume here that scientific understanding leads to technological control. We want control. Yet, we doubt our own wisdom to know how to use this control. In our attempt to gain control over nature, we may so violate nature that it will lash back with destructive force. This fear is most associated with genetics and ecology. Genetic engineering, wherein we alter our genome and perhaps alter our own essence, is the primary area of science that provokes fears of playing God. Such fears also arise in ecology, where we worry that civilization may soon pass the point of no return and the environment will poison the human race into extinction.

We have just described the cultural meaning of the phrase, "playing God." This term belongs in the category of cultural myth. It provides a cipher for discerning the love and fear relationship our wider society has with the scientists among us. The parish pastor dare not misinterpret what is transpiring here. The pastor dare not simply respond to shrill voices of anxiety or hysteria that denounce godless science for endangering the human race with its Frankensteinian recklessness. The pastor needs to pause, analyze, discern, and reflect, before responding. But, a response is definitely called for.

The first thing to observe is that the God of "playing God" is not necessarily the God of the Bible. Rather, it is divinized nature. In Western culture nature has absorbed the qualities of sacredness. Science along with technology risk profaning the sacred.

We have suggested above that we are talking here about myth, about the place of science in the contemporary worldview. In this case, an actual mythical story is at work. Our use of the phrase "playing God" relies on the ancient Greek myth of Prometheus. According to this myth, when the world was being created, the sky god Zeus was in a cranky mood. The top god in the Olympiad decided to withhold fire from earth's inhabitants, leaving the nascent human race to relentless cold and darkness. Prometheus the Titan, whose name means "to think ahead," could foresee the value of fire for warming homes and providing lamplight for reading late at night. He could anticipate how fire could distinguish humanity from the beasts, making it possible to forge tools. So, Prometheus craftily snuck up into the heavens where the gods dwell and where the sun is kept. He lit his torch from the fires of the sun, then he carried this heavenly gift back to earth.

The gods on Mount Olympus were outraged that the stronghold of the immortals had been penetrated and robbed. Zeus was particularly angry over Prometheus's *hubris*, so he exacted merciless punishment on the rebel. Zeus chained Prometheus to a rock where an eagle could feast all day long on the Titan's liver. The head of the pantheon cursed the future-oriented Prometheus: "Forever shall the intolerable present grind you down." The moral of the story, which is remembered to the present day, is this: human pride or hubris that leads us to overestimate ourselves and enter the realm of the sacred will precipitate vengeful destruction. The Bible provides a version of the same point: "Pride goes before destruction" (Proverbs 16:18).

For us in the modern world who think scientifically, no longer does Zeus play the role of the sacred. Nature has replaced the Greek gods. It is nature who will strike back in the Frankenstein legend or its more contemporary geneticized version, Michael Crichton's novel *Jurassic Park* (1990) and the subsequent movies. The theme has become a common one: the mad scientist exploits a new discovery, crosses the line between life and death, and then nature strikes back with chaos and destruction.

Interpreting the Gene Myth

How should religious leaders interpret this classic myth as it influences contemporary culture? Should the parish pastor believe the myth? Should the parish pastor act out of the worldview of this myth? Or, should the pastor demythologize?

Numerous religious leaders have allowed themselves to conform to the myth; and they have taken up rhetorical arms against science. A 1980 task force report, *Human Life and the New Genetics*, includes a warning by the U.S. National Council of Churches: "Human beings have an ability to do Godlike things: to exercise creativity, to direct and redirect processes of nature. But the warnings also imply that these powers may be used rashly, that it may be better for people to remember that they are creatures and not gods." A United Methodist Church Genetic Science Task Force report to the 1992 General Conference stated similarly: "The image of God, in which humanity is created, confers both power and responsibility to use power as God does: neither by coercion nor tyranny, but by love. Failure to accept limits by rejecting or ignoring accountability to God and interdependency with the whole of creation is the essence of sin." In the hands of Christian leaders, the myth tells us that we can sin through science by failing to recognize our limits and, thereby, violate the sacred.

However, there is an alternative route one can take. As we noted above, genetics (along with ecology) is the field of research that provokes the most anxiety regarding the threat that scientists will play God. This is because DNA has garnered cultural reverence. The human genome has become tacitly identified with the essence of what is human. A person's individuality, identity, and dignity have become connected to his or her individual genome. Therefore, if we have the hubris to intervene in the human genome, we risk violating something sacred. This tacit belief is called by some the "gene myth," by others "the strong genetic principle" or "genetic essentialism." This mytheme—a mini-myth within the larger Promethean myth within the still larger worldview of science--provides an interpretive framework that includes both the assumed sacrality of the human genome combined with the fear of Promethean pride.

The preacher and teacher in the parish setting should critically if not prophetically question the gene myth. Doubt should be registered about the equation of DNA with human essence or human personhood. A person is more than his or her genetic code. The National Council of Churches of Singapore put it this way in *A Christian Response to the Life Sciences*: "It is a fallacy of genetic determinism to equate the genetic makeup of a person with the person" (Singapore, 81). No person is reducible to his or her genome. No person is a victim of a thoroughgoing genetic determinism. At some level, this cultural myth needs deymythologizing if not descientizing, if the parish pastor is to move people to a reasonable and healthy understanding of human nature in light of our faith in God.

Genetics, Ethics, and Worldview Construction

In the pastoral setting, increasingly parishioners will come to their clergy for counsel and advice on genetic issues. Initially, couples planning to bring children into the world will visit with their genetic counselor at the clinic and then show up on the pastor's doorstep for further discussion. Pastors will need to understand the overlap between pastoral and ethical concerns that will come in a single package. Stem cell therapy,

selecting genes for future children, altering genomes, aborting defective fetuses, and envisioning a genetic future for children will appear on the list of concerns. The parish pastor needs to be ready.

Here, we will look at one of the issues that might confront the pastor which combines counseling and ethical concerns, namely, the relationship between genetic therapy and genetic enhancement. In addition to appearing as a pastoral matter, it is also a public policy issue.

Employment of advancing genetic technologies to alter human DNA leads to considerations regarding the distinction between therapy and enhancement. At first glance, therapy seems ethically justifiable, whereas enhancement seems Promethean and dangerous. The term *gene therapy* refers to directed genetic change of human somatic cells to treat a genetic disease or defect in a living person. With four to six thousand human diseases traceable to genetic predispositions—cystic fibrosis, Huntington's disease, Alzheimer's, many cancers—the prospects of gene based therapies are raising hopes for dramatic new medical advances. Few if anyone find ethical grounds to prohibit somatic cell therapy via gene manipulation.

The term *human genetic enhancement* refers to the use of genetic knowledge and technology to bring about improvements in the capacities of living persons, in embryos, or in future generations. Enhancement might be accomplished in one of two ways: either through genetic selection during screening or through directed genetic change. Genetic selection may take place at the gamete stage, or more commonly as embryo selection during preimplantation genetic diagnosis (PGD) following in vitro fertilization (IVF). Genetic changes could be introduced into early embryos, thereby influencing a living individual, or by altering the germ line, influencing future generations.

Some forms of enhancement are becoming possible. For example, introduction of the gene for IGF-1 into muscle cells results in increased muscle strength and health. Such a procedure would be valuable as a therapy, to be sure; yet, it lends itself to availability for enhancement as well. For those who daydream of so-called designer babies, the list of traits to be enhanced would likely include increased height or intelligence, as well as preferred eye or hair color. Concerns raised by both secular and religious ethicists focus on economic justice—that is, wealthy families are more likely to take advantage of genetic enhancement services, leading to a gap between the "genrich" and the "genpoor."

The most ethical heat to date has been generated over the possibility of germ line intervention, and this applies to both therapy and enhancement. The term *germ line intervention* refers to gene selection or gene change in the gametes, which in turn would influence the genomes of future generations. Because the mutant form of the gene that predisposes for cystic fibrosis has been located on chromosome four, we could imagine a plan to select out this gene and spare future generations of the suffering caused by this debilitating disease. This would constitute germ line alteration for therapeutic motives. Similarly, in principle, we could select or even engineer genetic predispositions to favorable traits in the same manor. This would constitute germ line alteration for enhancement motives.

Such efforts at genetic engineering are risky. Too much remains unknown about gene function. It is more than likely that gene expression works in delicate systems, so that it is rare that a single gene is responsible for a single phenotypical expression. If we remove or engineer one or two genes, we may unknowingly upset an entire system of

gene interaction that could lead to unfortunate consequences. The prohibition against "playing God" serves here as a warning to avoid rushing in prematurely with what appears to be an improvement but could turn out to be a disaster. Ethicists frequently appeal to the precautionary principle—that is, to refrain from germ line modification until the scope of our knowledge is adequate to cover all possible contingencies.

It is important to note that the precautionary principle does not rely upon the tacit belief in DNA as sacred. Rather, it relies upon a principle of prudence that respects the complexity of the natural world and the finite limits of human knowledge

Conclusion

The parish pastor or priest could be motivated to invest time and energy in the worldwide dialogue between science and theology out of pure curiosity, or even out of a desire to enhance the effectiveness of his or her own ministry. We have tried to show here that three areas of pastoral responsibility—preaching, teaching, and counseling—all could benefit from increased sophistication regarding the scientific picture of the world in which we live. By no means do we suggest that science provide the content of what the preacher or teacher or counselor has to say; yet, for the sake of credibility and relevance, what is said should resonate with what is unsaid about the scientific worldview we all share.

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