THE BULLETIN OF THE ECUMENICAL ROUNDTABLE ON SCIENCE, TECHNOLOGY, AND THE CHURCH

COVALENCE

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Divine Action and Ethical Decision-Making[1]

The Rev. Dennis Bielfeldt, Ph.D.

I

I remember the response of one of my professors fifteen years ago when I had tried to connect theology to science in one of my papers. "Ah, but that's *precritical*," he snorted. In those days we learned early on the Kantian truth that God could neither be a *substance* nor could God *causally relate* to anything else. Only after understanding this did we move on to the important business of studying the various post-Kantian options, all of which presupposed what Ian Barbour has called the *independence* motif: theological and scientific language cannot refer to a common reality.

In doing theological ethics, one must take into consideration the putative causal connection between God and world.

While the greatest theological expressions of the past two centuries presuppose this Kantian-inspired "*causal quarantine*" of God, I am increasingly concerned about the disconnect between this presupposition and the views of those who occupy the pews. It seems that these faithful Christians actually believe that God is at work in the world. One of the things I like best about the science/theology discussion is the working assumption that God need *not* be a causally impotent being, that serious theological reflection can and should try to conceive how it is that God is actually linked to the universe. In other words, in important respects the science/theology discussion is as *precritical* as the views of those to whom I regularly preach on Sunday mornings in the small rural parish I serve. There is something refreshingly honest about serious theological work undertaken that actually *links* to beliefs of those in the church.

I want to talk today about how one's view of the causal relationship between God and the universe can affect an important activity in the congregation: ethical decision-making. I shall argue that adherents of the *independence* motif may actually find that their ethical judgments are at odds with those in the pews *because* they adopt the assumption of divine causal impotence. It turns out that they may well judge certain propositions false that those rejecting that motif would regard as true, and vice-versa. My point is simply this: In doing theological ethics, one must take into consideration the putative causal connection between God and world.

In what follows I shall suggest that the *ontological* question of the relation between what theology talks about and what science talks about is critically important to the question of how the Church responds to ethical issues. After discussing an especially clear example of this, I shall examine three general issues in the science/religion discussion that have great import at the congregational level for theologically-informed ethical judgment

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[1]Delivered to the Ecumenical Roundtable at its Spring 2000 meeting

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COVALENCE

Covalence: the chemical bond formed by the sharing of one or more electrons between atoms which is the basis for organic chemistry and, therefore, life itself. This bulletin pursues the bonds formed between science and theology that gives greater meaning to life than science or theology taken separately.

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From the Editor:

The Best Laid Plans... (A Personal Word)

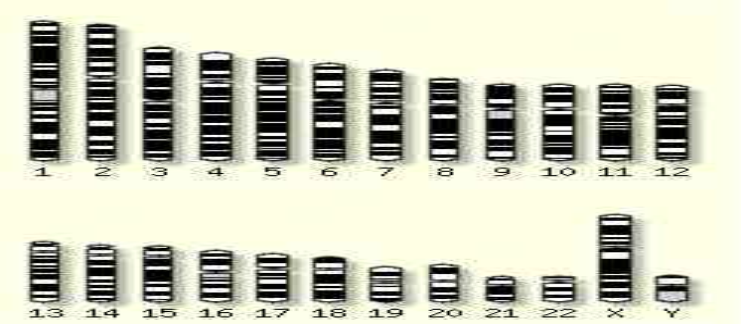
In the last issue of COVALENCE you received (Spring-Summer 1999), I promised that we would be back on track in 2000. Alas, that did not happen. Circumstances prevented me from fulfilling that promise to you. For that, again, I apologize.

We are, now, back on track to produce four issues in 2001 and then get back to our planned bi-monthly production schedule in 2002. Beginning with this issue of COVALENCE, you will be able to receive COVALENCE in either print or electronic form (as a PDF file). You may find information about downloading COVALENCE at http://www.elca.org/dm/midl/faith&.htm. All future issues will be posted on the web immediately after editing, therefore, come back and visit our site regularly. Prior editions of COVALENCE will be posted as time and volunteer effort permits

Human Genome Defends Darwin, Divaricates Darwinistic Determinism (an editorial essay)

Part 1. The Genome

For many of us an image, perhaps the image, of the vastness of the genetic information that makes us human is what is now a twenty year old image of the late astronomer (and science popularizer) Carl Sagan



standing next to an infinite number of card file cases with “millions and millions” of cards, each one representing genetic instructions. It is through the stages and generations of evolution, Sagan tells the audience, that the human brain unfolded through the "book of life,” chromosomal DNA. Even though the DNA double helix is a language written only in four letters, the variation of these letters seems infinite, he goes on to say. As for human beings, their hereditary material requires some five billion bits of information. These “bits of information in the encyclopedia of life-in the nucleus of each of our cells - if written

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out in, say English, would fill a thousand volumes. Every one of your hundred trillion cells contains a complete library of instructions on how to make every part of you." [Carl Sagan, *COSMOS*, Ballantine Books, 1980, p. 227.]

While the image of an infinite number of card file cases may be one that is useful to visualize the enormous amount of information which can be stored in our chromosomal DNA, the reality, based on the findings of the mapping of the human genome, is more subtle. Prior to reports in the February 2001 issue of Nature, most text books would have estimated the human genome at 100,000 genes, based on what had been an arc of increasingly larger genomes as one moved up the evolutionary ladder from fruit fly (13,000 genes) through the laboratory roundworm (19,000 genes) through the mouse (around 30,000 genes). However, the most recent findings from both Craig Vetner at Celera Genomics and Francis Collins at the National Human Genome Research Institute suggest that the human genome, when fully mapped, will only weigh in at around 30,000 genes also, as only 300 or so genes have been found in humans that are not also found in the mouse. Thus, we share 99% of our genetic makeup with what are relatively primitive mammals, and the genetic code that makes us human will most likely consist of only three billion letters, far less than anyone expected.

All the genetic material that makes up *Caenorhabditis elegans*, the laboratory roundworm, with its 959 cell body (300 of which are neurons) also are a part of the make up of *homo sapiens* with our 100 trillion cells and 100 billion neurons. We are not that far removed from these earlier ancestors. How can we be, with a genome that is a mere 57% larger?

At the same time, something else must be working here. How is the complexity of larger animals explained? It seems like more complex organisms are able to create a greater variety of proteins and to use them in combinations not found in lower organisms. The increasingly complex varieties of proteins that cells can utilize and the number of differing enzymes that can be produced by these specialized cells are seen to account for as much of the complexity of larger animals as the genetic makeup of the animal.

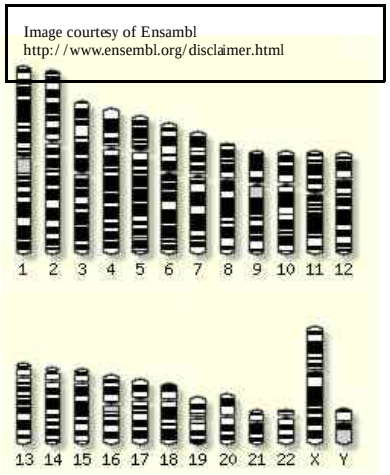
The smaller than expected genome for humans, and the increasing knowledge of how important protein synthesis and enzyme production is in organisms leads this writer to two conclusions: Evolution is as close to a fact as we can ever get in science, and, at the same time "Darwinian Determinism" can be pulled apart. Thus we can say "Yes", to Darwin, but only say a much weaker "To Some Extent" for Determinism.

Part 2. Darwin Defended

In an article first posted on MSNBC, [and reported in The Philadelphia Inquirer, February 23, 2001], Arthur Caplan, director of the Center for Bioethics at the University of Pennsylvania, stated that the biggest news to come out of the findings of the Human Genome Project was not that certain firms will make money off genetic information or that insurers will exclude people based on their genetic profile. Rather, as he put it, the "genome reveals, indisputably and beyond any serious doubt, that Darwin was right: Humankind evolved over a long period of time from primitive animal ancestors." We are, he argues, "descended from bacteria. There is no other way to explain the jerry-built nature of the genes control [of] key aspects of our development. It's not just that we have DNA in common with these other, older life forms. It's also that this string isn't very elegant: It's redundant, full of noise, inoperative stretches, junk. It came to be in a complex, selective, messy process over millions and millions of years." He also quotes Eric Lander (at the Whitehead Institute, Cambridge, MA) that if you look at our genome it is clear that "evolution . . . must make new genes from old parts."

J. Scott Turner, who has written on the complexity of animal built structures, agrees. "In one sense," he writes, "the question is largely settled: Evolution is a fact, and natural selection is a crucial feature in its operation. It simply must be taught as a central principle of biology." Nothing other than evolution can explain our genetic makeup and the millions of years it has taken for *homo sapiens* to evolve from primitive ancestors.

This does not mean that evolution will now be accepted as fact by all.



Over the last several years, opponents of evolution have shifted from a "Creation Science" approach to explaining how the created order happened and have begun to use the "intelligent design theory" (IDT) to explain how the creation came to be. The IDT approach is to argue that there is an "irreducible complexity" to living things that can not be explained by the mere mechanism of evolution.

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Human Genome... (Continued)

This essay can not do justice to the dispute between the "Darwinists,""Neo-Darwinists" and Determinists on the one hand over against those who believe in "intelligent design," "progressive creation" or "young earth creationism." That is perhaps, left for another day. What is compelling, for me, is the evidence from the genome."The history of humanity is written in our DNA. Those who dismiss evolution as myth, who insist that evolution has no place in biology textbooks and our children's classrooms, are wrong," Arthur Caplan tells us, "The message our genes send is this: Charles Darwin was right."

Part 3. The Genome Divaricates Darwinistic Determinism

Yet, for all that is right about Darwin, there are doubts about "Darwinistic Determinism" specifically, and "Determinism" with a capital "D". While many aspects of the created world are determined by the genes, determinism is not the only game in town. J. Scott Turner has written, "For all its wonderful insights, evolutionary biology is still a work in progress, simmering with many exciting ideas, only some of which focus on Darwinism."
Turner, whose speciality is termites and their animal-built structures, says that Darwinism has a clever answer to the question, "Why are social insects (like ants and bees) highly altruistic?" After all worker bees will defend the hive even though they will loose their life in the process and millions of sterile ants will defend their queen to the death against intruders. Darwinism says, in essence, it is the process of haplodiploidy (the sharing of ½ of a mother's genes to its daughters and sons) that guarantees that this "so-called" altruism works. Workers are most assured of passing on their genes by forcing their mother to produce more sisters. This "altruism" is just one more example of a "selfish gene" making sure that it gets transmitted, by whatever means.

Termites, writes Turner, turn Darwin upside down. Like humans, termites receive genetic material from both father and mother, and are not much different morphologically than their cousins, the cockroach, who are not social insects. So why are termites altruistic with queens and workers living in hives while cockroaches aren't? It seems, according to Turner, that there is a symbiosis between the termite and certain microorganisms which live in their stomachs. Termites can chew, but not digest cellulose, the most abundant complex sugar on earth. The microorganisms, distant relatives to yeast, can digest cellulose, but have no mechanism for movement. Termites are not born with these microorganisms, they must be fed with the digestive juices of other termites to acquire it. Thus, as Turner says, " From the outset, then, termites are forced to interact socially -- or lose access to the abundant and nutritious stores of food in cellulose. Thus adaptation, and the natural selection that follows from it, results from how closely termites and microorganisms can cooperate. Termites benefit from being able to digest cellulose. The microorganisms gain by having organisms with legs and nervous systems searching for and gathering food for them. Together, they prosper in ways they could not separately." [J. Scott Turner, "Termites and Other Natural Teachers", *The Chronicle of Higher Education*, 11/03/00]

According to Turner many social animals (like termites) build structures which then alter their environment, which, in turn, alters their life. "Animal-built structures are properly external organs of physiology - devices to modify and control the flows of energy and matter between an organism and its environment," he writes, and these socially built structures thus expand the organism's chance for success.

Symbiosis, social interaction and environmental shaping, therefore, seem to be as important in the lives and in the success of termites as their genetic makeup..

Likewise for humans, genes have a *vital* role in the shaping of us as beings and defining our range of possibilities, but other factors are also crucial. Paul Ehrlich, professor of population studies and biological sciences at Stanford, writes "Genes do not shout commands to us about our behavior. At the very most, they whisper suggestions, and the nature of those whispers is shaped by our internal environments (those within and between our cells) during early development and later, and usually also by the external environments in which we mature and find ourselves as adults." Further, he states, "The nature-nurture dichotomy, which has dominated discussions of behavior for decades, is largely a false one -- all characteristics of all organisms are truly a result of the simultaneous influences of both. Genes do not dictate destiny in most cases (exceptions include those serious genetic defects that at present cannot be remedied), but they often define a range of possibilities in a given environment." [Paul Ehrlich, *Human Natures: Genes, Cultures, and the Human Prospect*, Island Press]

Those most closely involved with the Human Genome Project have also spoken against thinking too deterministically about what the genome can tell us. Craig Vetner has warned that we should be wary about "the idea that all characteristics of the person are `hard-wired' by the genome,' and Francis Collins has stated that "one of the greatest risks of this focus on the genome" is that people will believe that their choices are "hard-wired into our DNA and free will goes out the window and we move into this mind set of genetic determinism." At best, says Dr. Robert

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and evaluation. While all are old issues in the science/religion conversation, I suggest that the effect of each upon ethical valuation has not been adequately appreciated.

II

We shall begin our discussion of the importance of ontological presuppositions for congregationally-based ethical decision-making with the example of Bob, a homosexual who strongly believes that his lifestyle is genetically determined. I shall argue that Bob may display a number of different ethical responses to his homosexuality depending upon what he takes to be the causal connections between God and the world. For instance, imagine Sue says to Bob that he should pray that "God should change his homosexuality." I claim that the moral propriety of the statement that "it is good to pray to God to have one's homosexuality changed" is contingent upon what Bob takes the underlying ontological situation to be regarding the causal link between God and world. Let us examine four positions that Bob might adopt:

1) Bob might be convinced by the *Kantian* view that God can neither be a substance (physical or otherwise), nor can God enter into causal relations with other substances. On this view, God-talk must be analyzed so that it makes no commitment to substance or causality. Thus, "God changes homosexuality" cannot mean that some divine entity actually brings about a change in the natural order. Instead, an alternate analysis of the statement must be given, an analysis that does not vitiate one's ontological scruples. Accordingly, the statement might be construed as an *expression* of existential attitudes, a *donation* of courage in the face of future, or a moral recommendation or valuation. For example, prayer to God that God might "change one's homosexuality" might be regarded as an *expression* of one's inability to accept oneself. Many who accept the independence thesis would no doubt wince at such a prayer and regard it as wrongheaded or morally-corrupt precisely because they do not suppose it possible for God to cause events in the natural order. Because they understand the proposition to be an expression of or statement about Bob's lack of acceptance of his own condition, they can quite plausibly claim that "it is good to pray to God to have one's homosexuality changed" is false. Why? If it is true that Bob's homosexuality is genetic and cannot be altered by God, then on utilitarian grounds his greatest happiness (and the happiness of those around him) is perhaps best realized by his accepting his genetic situation. To not accept what cannot be changed is a prescription for unhappiness. The fact that one might argue deontologically to another conclusion does not concern me here. I merely want to indicate that on utilitarian grounds the statement "it is good to pray to God to have one's homosexuality changed" is plausibly false, given the underlying Kantian ontology.
2) Bob might hold some variety of *Thomism* (or God-universe interactionistic dualism), and assert minimally that God is a substance, albeit not a natural one, and that God is causally related to the universe through *primary causality* and through supernatural intervention. Leaving aside the theological question of why God would need to interrupt his continuous activity of bringing about actualizations in a primary causal way to intervene directly, we ask if the proposition "it is good to pray to God to have one's homosexuality changed" is false on a Thomistic ontology. It is plausible to argue that this different ontology affects the ethical evaluation of the proposition, for presumably the ontology of Thomism does allow that God hears prayer and can act in accordance with that prayer. Moreover, God's direct intervention is sufficient for the event of Bob's genetic predisposition being changed. Given the challenges homosexuals continue to face in our society, it is credible to argue on utilitarian grounds that it now might be *true* that "it is good to pray to God to have one's homosexuality changed." If God turns out not to do anything about Bob's homosexuality, Bob can always subsequently accept his homosexuality by considering it to be God's will. After all, if God is a real causal agent who can immediately bring about anything God desires, then if he does not change Bob's genetic predisposition, that predisposition must be regarded as passively willed by God.
3) Bob might believe that God acts in the world, but not through direct supernatural intervention. Instead of violating the causal closure of the physical, God works at the quantum level in being part of the necessary cause of every particular quantum actualization. While the philosophical difficulties with bottom-up approaches to divine agency are legion, we will not examine them here. We are interested in determining how such divine efficacy *(Continued on Next Page)*

Divine Action... (Continued) might affect the utilitarian evaluation of the statement that "it is good to pray to God to have one's homosexuality changed." Unfortunately, the matter is not at all clear. Much depends upon what is physically possible and not possible for a God working at the quantum level to do regarding the change in genetic dispositions. The factual question of how much divine action at the micro-physical level can percolate up into the macro-physical level is all important. If one holds that God's action at the micro-physical level is basically consistent with macro-physical determinism, then it might seem that "it is good to pray to God to have one's homosexuality

changed" is again false on utilitarian grounds. However, another evaluation is possible. Perhaps while "bottom-up" divine action cannot change Bob's genetic dispositions, such action is causally relevant in allowing Bob to act in accordance or at variance with those dispositions. One might hold some version of Roger Penrose's thesis that quantum gravitational effects in the brain make free-will or contra-causal agency possible. If so, then perhaps "it is good to pray to have one's homosexuality changed" is true after all.

4) Finally, we might ask how the statement fares if Bob holds that God works as a top-down causal agent. Here things become murkier. The crucial question is this: What effects would top-down constraints have upon the causal story of Bob's genetic homosexual disposition? While there is much that is not clear, it is plausible to hold that those top-down constraints, however specified, would not be of the kind to allow divine *intervention* or special providence. Furthermore, they do not seem to be capable of providing resources for the contra-causal free act of acting in accordance or at variance with one's genetic disposition. Although God would act in the world on the top-down approach, it seems unclear that He could act specifically enough to grant Bob freedom from his homosexual genetic leash. If this is so, then it seems reasonable to conclude again that the proposition "it is good to pray to God to have one's homosexuality changed" is false.

While much more needs to be said about the specifics of this example, I think that the general morale is clear enough: *How we view the underlying ontological situation, and thus the reference of our theological language, has an effect on the evaluation of our ethical judgments*. Armed with this insight, I now shall talk directly about the reference of theological language in terms of three basic questions in the religion/science conversation. These three are critically important, in my opinion, if we are somehow to find a place for divine (and even human) activity in our world. They are all very old questions, questions oftentimes not taken seriously enough in the current religion/science dialogue.

1) *Can one really reconcile the standard efficient causal account of evolution with the teleology implicit in talk of creation?*
2) *Can one really reconcile the teleology of personal agency and spirit-talk with efficient causal explanations assumed by current nonreductive physicalist proposals of mind?*
3) *Can one really make sense out of a connection linking God and the universe, and if not, can one make sense out of the notion that divine emergent properties causally influence the complex configurations from which they putatively arise?*

While I cannot say much about any of these, my hope is to at least raise the questions and indicate the effects their resolution might have *at the congregational level* upon ethical issues.

III

The first topic is evolution. While some would say that there is no conflict between science and theology on the issue, that really is true only if one adopts the *independence* thesis. In my opinion, there remains considerable difficulty in relating talk of God's creation to evolutionary accounts. The problem is that the neo-Darwinian evolutionary synthesis seems to allow no place for *telos* or purpose, yet such *telos* is necessary if God is to be somehow causally at work in the evolutionary process.

How we view the underlying ontological situation ... has an effect on the evaluation of our ethical judgments.

Teleology has traditionally been concerned with purpose in nature, purpose not predominantly resulting from conscious human intent. Characteristic of teleology is talk of *functions* and *goals*. For instance, one might say that the heart functions to pump blood or that the goal of the rabbit whose fur turns to white in the winter is to avoid predators. Aristotle, of course, invested all of nature with goals, claiming bodies travel in perfect circles because it is their nature, and bodies tend to fall because

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that too is their nature. Prior to the nineteenth century, natural theology commonly assumed that God created the world such that each entity in it tended to realize its God-given nature. The eye was designed such that it functioned to allow sight. Purpose was thought to be immanent in all that was.

Darwinian theory offered an account whereby organismic functions and goals were no longer understood as due to conscious design. In the last century, work in population genetics helped shed light on the process of the inheritance of variations. Mutations and gene recombinations introduce variation in a seemingly random way, apparently unrelated to the requirements of the organism. Natural forces subsequently act upon the diversity in population introduced through these mutations and genetic recombinations such that particular mutations survive in particular environmental contexts. Subsequent generations of selected mutations produce complex higher-order life that, while appearing to be something towards which the universe is striving, is actually only the result of past events. Higher-order complex life is what happens to survive within a given environmental context. If environmental pressures were different (e.g., if radiation bathed us) then perhaps cockroaches would appear to be a goal of the universe's evolution.

What must be noticed in this story is the rejection of final cause in favor of the category of efficient causality. Mutations and genetic recombinations occur and are subsequently selected. While the mutations and recombinations are caused by antecedent events at the biochemical level, the natural selection is caused by antecedent events at the macro-physical level. The result is that the movement to increasing complexity is a function of past events, not any teleological "lure" implicit in nature. Richard Dawkins' *The Blind Watchmaker* forcefully represents this view, claiming that "the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way."[2]

While there are any number of ways to respond to the challenge of reconciling divine creation with mechanistic evolution, I shall not pursue them here. What I am critically interested in is how one's intuitions about whether an efficient-causal or teleological explanation is *deeper* can influence his or her evaluation of ethical issues. For instance, Suzy the good Lutheran, believes that God created and continually creates the universe. She holds that everything that God creates is good and that God has a purpose in creating everything. On the other hand, she is a biochemist and knows full well the processes of genetic variation and determination. After learning that her three-month old fetus has Downs Syndrome, she considers an abortion. While she *knows* theologically that everything that God creates is good, she realizes *scientifically* that her fetus results from a most unlikely chance-like combination of genetic material. She must decide whether this statement is true or false: "It is morally permissible to terminate the pregnancy." How will she decide?

Let us imagine that Suzy thinks clearly, and realizes that the same set of events cannot simply be both mechanistic and teleological at the same time. Let us assume further that Suzy reads the philosophy journals and decides that the efficient causal explanation is the deeper one - - though she knows that one can allow teleological explanations for certain purposes. Let us also assume that Suzy dislikes utilitarianism and is committed to a deontological approach to ethics. Now consider Suzy's "duty" to her fetus. If she believes her fetus results from the teleology of divine creation, she is apt to regard it as a full-member of the kingdom of ends, for its *purpose* is to have a rational nature. Arguably, she will thus be constrained so as to act upon it as an end rather than a means. Consequently, she is likely to regard the ethical sentence "it is morally permissible in this instance to have an abortion" as false.

Now let us imagine that while loving and using theological and religious language Suzy knows that the deepest explanation of her fetus' Downs Syndrome is biochemical; it is a matter of chance-like recombinations of genetic materials. It is plausible that even though Suzy understands the *expressive* and *donational* power of religious language, she will nonetheless be less inclined because of her understanding of the deep nature of the genetic explanation to regard her fetus as a full member of the Kantian kingdom of ends. In short, she will be more prone to abort her pregnancy. Consequently, she may on deontological grounds regard the proposition "it is morally permissible in this instance to have an abortion" as true. The question of who belongs to the kingdom of ends seems here to be at least partially dependent upon what explanation really "carves the beast of reality at its causal joints."

IV

The same problem between the efficient causal and the teleological explanation concerns our view of the self. Recently, Nancey Murphy has adopted *nonreductive physicalism* with hopes of saving human agency from a *reduction* to brain states, or outright *elimination* in favor of neurostate description. On this view, one can talk meaningfully about human freedom and rationality while at the same time affirming that all mental events are identical with some physical events or other. Again it is important to get clear

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[2]Richard Dawkins, *The Blind Watchmaker*, WW Norton, NY, 1987 p. 15

on the problem for theology.

Study of the human brain proceeds methodologically like the study of other physical entities. One attempts to understand brain behavior by uncovering the causal antecedents of that behavior. This can be done by isolating the "general laws" at work in brain processes and understanding the underlying conditions that realize those general laws. To understand the brain is to explain and predict how one neural event is related to another event, and how such events are related to causal inputs and outputs. Thus, brain research seems to presuppose what philosophers call *event-event causality*.

Our experience of self is *not* an experience of one constituted by event-event causal chains, however. We experience a unity of our various awarenesses, and we make normative judgments concerning all matters of things. We experience ourselves as comprised of an *agent* who *acts* in the world. The standard question in the philosophy of mind is how to reconcile our experience of *agent-act causality* with an underlying physicalist paradigm assuming *event-event causality*. How can we reconcile our experience of one who acts from *reasons* with the fact that talk of "reasons" cannot arise in brain state description? Furthermore, how can we square our talk of agency (particularly "free agency") and "spirit" with the seeming determinism of brain processes?
Asking these questions is, of course, standard fare in any philosophy of mind course. Nancey Murphy's particular contribution is to claim that *nonreductive physicalism*, one of the standard positions in the current literature, can square with Christian anthropology. Freedom and rationality can somehow be made consistent with their realization in wholly physical systems. She rejects any mind/body dualism, claiming implicitly that the notion of *downward causation* can do the work once reserved for the immortal soul. The idea is that human agency while realized in brain processes can somehow *affect* those brain processes such that they are actualized differently than they otherwise would have been actualized in the absence of that agency.

I have written quite a bit on the problem of *downward causality* and the related problems of supervenience and mental causation, generally claiming that there is much less to downward causality than meets the eye. I cannot enter here into that technical discussion, but will move immediately ahead to consideration of how one's ontological commitments to event-event or agent-action explanation can influence one's ethical reasoning.
Imagine the scenario where Meg must decide whether or not to pull the plug on Aunt Mavis who has been comatose in her bed for weeks. Brain activity has virtually ceased. Imagine now that Meg is a *nonreductive physicalist* holding that all mental events are token identical to some brain events. Now if Meg really is a nonreductive physicalist, she realizes that pulling the plug on Mavis really does kill her, for no self, no center of Mavis' being can remain after the plug is pulled. This view is clearly entailed by mind/brain token identity.

Now consider that Meg is an idealist or dualist somehow claiming that an agent-act description is the deepest description of the mental. Because dualism or idealism rejects the token identity of brain states and mental states, Meg might more easily pull Mavis' plug and usher her agency into another modality of existence. The statement "it is morally permissible to disconnect Mavis from life support" may thus have different evaluations due to the different entailments of "disconnect" on the different views. If "disconnect" entails "allows to die" as in the nonreductive physicalist scenario, then the truth of the ethical proposition seems different than if it means "aids in ushering into another mode of existence" as on the dualistic assumption.

Consider now Freda's freedom. It seems that saying that Freda has freedom is much different for the nonreductive physicalist than for the dualist. We are interested in determining whether or not this statement is true: "Freda is morally responsible for her inveterate extramarital activity." Notice that if the agent-act explanation is the deepest and one can make profound sense of reasons causing action, then it is possible that Freda could have done other than what Freda did in fact do, and that thus Freda is responsible for her dalliances. If, however, the event-event description is the deepest, and if all mental events are somehow token identical to physical events, then it seems to follow that nature being what it is, Freda cannot be held morally responsible for her clandestine trysts. What is necessary in the case of Freda would then be good psychological and physiological treatment, not ethical and moral *judgment*.

Our ethical judgments about what we should do are influenced by our prior assumptions about the nature of God's connection to the universe.

We are confronted with the same scenario in this case. Our ethical judgments about what we should do are influenced by our prior assumptions about the nature of God's connection to the universe. My point is simply this: Many of those in our pews will
be faced with judgments of the kind I have presented. They hear our theological language, they listen to talk of God's "mighty acts

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Divine Action... (Continued)

in history and nature"; they listen to the church's language about the importance of the human *person* or *spirit*. Consequently, when they are forced to evaluate an ethical situation, they will take the words seriously and assume that the words have a particular *meaning*. What they assume that meaning to be is, I argue, critically important for the task of applying their ethical standard to the concrete situation. It makes a difference to Meg's application of a deontological yardstick to Mavis, *what* Mavis really is.

V

Finally, let us consider the general relationship between the domain of the divine and that of the universe. I suggest that how we evaluate ethical claims depends in part on how we conceive this relationship. A standard way of thinking the transcendent relation of God to the universe has been asserted by *ontological dualism*, the claim that there are two fundamentally different orders of reality: divine being and physical being. Not surprisingly, such a God/universe dualism shares many of the same problems as its mind/body counterpart. Firstly, there is the *causal joint* question: How can one kind of stuff causally affect another kind of thing? What cosmic "pineal gland" can link the humors of the infinite and the finite?

What of the question of *conservation of energy*? How can something not in space and having no mass, momentum, and energy, bring about events in space with mass, momentum, and energy? Moreover, how can a God located outside the domain of the physical causally influence events within the physical order without violating the *causal closure of the physical*? These questions arise on standard mind/body dualism accounts, and have been thought to be so fundamental there that dualism has been largely abandoned. So if dualism is so problematic philosophically, how about *nondualism*?

One could perhaps claim that irreducible divine properties somehow *emerge* at higher-levels of complexity and attain causal powers of their own that are in principle irreducible to the causal powers of the entities from which they arose. On this view the human agent with her reasons and actions constitutes an emergent reality arising out of neural complexity. Once emergent, however, the agent takes on a causal life of its own. Similarly, God might be conceived to be an emergent, causally-efficacious reality arising out of extremely complex physical systems.

My purpose in talking about these two general positions is again ethical. Returning to our first example of Bob, I would say that the truth-value of "it is good to pray to have one's homosexuality changed" depends upon whether we embrace dualism, monistic divine emergence, or deny any God/universe causal connection. My reasoning should be apparent. As before, the moral propriety of the prayer seems to increase as a function of the degree to which God can actually bring about effects in the natural order.

If you are like me and studied theology in graduate school, you probably spent most of your time learning the various post-Kantian options that do theology without causal connection. You began with the presupposition that God and the universe could not be causally connected and that theological and religious language seemingly asserting such a connection must be reinterpreted. Because we all agreed then upon the general paradigm of *independence*, our ethical judgments about matters could proceed with at least some level of agreement. What I wish to suggest is that at the congregational level there has not been, nor will there probably ever will be, any agreement about the impossibility of divine/universe causal connection. This makes the task of doing theological ethics more difficult. Can we speak as theological elite for a definite theological ethical program if the people in the pews do not agree upon the presuppositions out of which that program flows?

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Human Genome... (Continued)

Plomin, the influence of genes on human behavior is "probabilistic rather than deterministic."

Part 4, the Possible Role of the Roundtable Churches

In the debate two years ago in Kansas regarding the teaching of evolution, Adrian Melott, who teaches at the University of Kansas U. Dept. of Physics & Astronomy, drew several conclusions about the debate that went on:

First, many Christians, including clergy, are in favor of good science and are *not* supportive of attempts to limit teaching of evolution.

Second, the creationists, as he says, "have been successful in taking hostage the image of Christianity. One example of their technique is the statement, `Christian geologists believe the Grand Canyon was formed in Noah's flood.'" Are Christians willing to let this statement stand as *the* representative statement from Christianity?

Third, many of the main line churches are relatively passive regarding "Scientific Creationism." "Many of the clergy are anxious about arousing a creationist minority in their own groups" he writes. But there is a flip side as well. When clergy become active in support of good science, he says, they are extraordinarily powerful.

4a.) Can we give support for Darwin? It is on Melott's third point

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that the churches of the Roundtable can be most useful. Can the Roundtable come up with a statement which could be brought back to our denominations for approval which would affirm our support for the knowledge that good science gives us, support for the theory of evolution which appears to be confirmed in the genome, and support for the teaching of evolution in public schools, despite the fact that some members of our churches will feel disaffected by such a statement?

b.) Can we say "no" to Determinism? Having defended Darwin and the scientists who support evolution (including those who do not necessarily believe in the action of the divine in the world), the churches of the Roundtable will also need to do one more thing. We also need to defend the philosophical/theological idea of "free will" over against what is clearly an unwarranted reductionistic determinism which wants to place all our behaviors squarely in our genetic makeup. As was said earlier, "genes are probabilistic, not deterministic," and humans, like all social animals, are a work in progress, shaped by many influences including genetic makeup, social structures, environments, and beliefs of all kinds, including religious beliefs[1].

c.)Can we find a middle way in the debate about evolution? It is clear that in speaking about evolution one can not speak about "meaning," "purpose," "value" and "intent," for they are not objective, measurable terms. To interject these ideas into a biological theory is problematic, no matter how sincere the religious beliefs of the proposer. At best, the biological sciences and the laws of biology are agnostic toward the creation – "this is how all of us got here, but don't ask about the purpose behind our being here." And even theology, the study of God, in this post modern world will come up with different understandings of words like "meaning," "purpose," "value" and "intent" depending, as Dennis Bielfeldt says elsewhere in this bulletin, "upon whether we embrace dualism, monistic divine emergence, or deny any God/universe causal connection." Yet the churches of the Roundtable have both the theological and scientific expertise to find ways to express the truths which are at the core of being human: that we are the product of a long history of evolution and, at the same time, that we are created purposefully by the Creator "of all that is, seen and unseen."

[1] Martin Luther would have argued that which you held most dear - believed in most - was, in fact your God (c.f. Martin Luther's *Large Catechism*). Likewise, Paul Tillich argued that one's "ultimate concern" was a belief in a "god" even if we did not call it so. So, one could argue, religious beliefs represent the beliefs of the highest priority for all humans even if their "ultimate concern" is not the traditional Judeo-Christian God.

Roundtable News:

The following revised "Statement of Goals and Structure" will be presented to the Roundtable adoption at the Roundtable's annual meeting to be held April 28th in Cleveland, OH.

Statement of Goals and Structure
for the
Ecumenical Roundtable
on
Science, Technology, and the Church
(Canada and the United States)

Adopted April 23, 1995
Proposed revisions April 28, 2001

The Ecumenical Roundtable on Science, Technology, and the Church (Canada and the United States) is an affiliation of denominational working groups and of concerned individuals from denominations without such groups who are committed to work together toward these goals:

1. to encourage the engagement of the churches in Canada and the United States on intellectual and ethical concerns related to science and technology;

2. to provide a setting in which churches can cooperate in the development of resources and strategies related to science and technology;

3. to provide a setting from which churches can challenge other ecumenical institutions, such as seminaries, about their awareness and responsiveness to science and technology;

4. to identify Christians in Canada and the United States who are interested in the agenda of the Roundtable, particularly individuals or communities who have limited access to scientific and technological resources and decision making, in order to foster their communication with the Roundtable and with each other and their awareness of opportunities and resources available to them, and to provide occasional resources, such as conferences, for them; and

5. to encourage the formation and support within additional denominations of programs and working units related

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to science and technology, through an invitation to participate in the Roundtable.

The Ecumenical Roundtable will seek to achieve these goals through a simple and largely informal structure, which will be defined according to these principles:

1. The Roundtable plenary will meet once each year to review its work in a brief business meeting and to engage in programs and other activities that sustain and enrich the life and work of the member delegations.

2. Attendance at meetings is generally open to interested individuals and to observers from denominations that are not members. Membership in the Roundtable is comprised of denominational or church-related working groups or similar efforts that have national responsibility for science and technology.

3. Between annual plenary meetings, decisions of the Roundtable will be made by a Steering Committee to which each of the member groups is entitled to appoint two members. The Steering Committee will meet in conjunction with the Roundtable, usually before and after the time of the Roundtable plenary meeting. In addition, the Steering Committee will meet by conference telephone call or by other means throughout the year. Ordinarily only one representative of each member group will participate in the call.

4. On a rotating basis, the member groups will assume the responsibility of presiding group for a one-year period that begins at the conclusion of the annual meeting. One member of the presiding group will be identified as the Chair of the Steering Committee and will assume responsibility for convening and presiding over the Committee. The presiding group will oversee the use of Roundtable funds for purposes such as conference call expense and the mailing of Roundtable resources needed for the annual meeting. The agenda and program of the annual meeting will be planned by the Steering Committee. The Steering Committee may establish ad hoc committees to advance the work of the Roundtable in specific areas, such as conferences.

5) Also on an annual rotating basis, another member group will also assume primary responsibility for site arrangements, including providing information to groups and to other participants about travel and other meeting needs. The Steering Committee may designate a Secretary and/or Treasurer or other support officers for the Roundtable.

6. There is no cost of membership in the Roundtable. Member groups are encouraged to contribute $200 each year to a Roundtable fund, used to defray costs of communications and other core expenses as determined by the Steering Committee.

Member groups assume the expenses of their participants, and any other expenses of the Roundtable will be shared as equitably as possible.

7. The Roundtable and the Steering Committee work collegially and toward consensus in a spirit of Christian harmony. When a vote is necessary, each member group will have one vote. In the event that a member group cannot agree on how to cast its vote, its vote is recorded as an abstention. All proposed actions of the Roundtable and the Steering Committee must receive an affirmative vote from more than 50% of member groups in order to pass. The Steering Committee may act for the Roundtable in all matters except revision of these guidelines and acceptance of new member groups, which must be recommended by the Steering Committee and decided in the Roundtable plenary. In addition, the plenary will receive an annual report of the Steering Committee, reporting all actions of the Committee.

An applicant may be admitted to the Roundtable provided it meets one of these criteria:

a. It is appointed or recognized by an official action at the national level of the denomination or church organization that they represent
b. It has staff support from their denomination or church organization; or
c. It has financial support from the denomination or organization it represents.

In addition, it must report on an annual basis to the national level of the denomination or church organization that it represents, with a copy sent to the Roundtable.

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9. Members are expected to attend the annual plenary, file an annual report of its activities to the Roundtable, and accept the responsibilities of presiding and hosting the Roundtable on a rotating basis.

10. The Roundtable claims no authority to speak for the churches its members represent or for the church as a whole. Its member groups do have an obligation to speak *to* their constituents on matters of science and technology. The member groups may work in concert through the Roundtable to address all member constituencies.

Adopted April 23, 1995, by those in attendance at the meeting of the Roundtable in Chicago, Illinois. To be revised April, 2001, by member groups in attendance in Cleveland, Ohio.