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Exploring Theology with Charles Darwin

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We live in exciting times for theology. Many old ideas are being rethought, and many new ones are being floated; and one very fruitful source of new insights is the natural sciences, not least among which is evolutionary biology. I'm not the only biologist who thinks so: for example, David Sloan Wilson made this comment, regarding current ways of thinking in the social sciences in general, which of course include theology:

"I will venture the following prediction: Take any subject that is relevant to human behavior, and study it in the way that a behavioral ecologist or an evolutionary game theorist would study the subject in nonhuman species, and that approach will be largely new from the standpoint of the human social sciences." [D. S. Wilson, in Dugatkin & Reeve (eds.), *Game Theory and Animal Behavior*, 1998: 267.]

Thus are we encouraged to explore new horizons, even in theology. After all, evolution is a major fact of life in the broadest sense, so theology could hardly get away with ignoring it. But my message for you today is that it's not just any version of evolution that's most fruitful for this exploration, but specifically Darwinian, or Neo-Darwinian, theory. So I want to touch briefly on several examples of how Darwinian thinking, or a Darwinian mindset, can give insights into diverse issues in theology and Scripture.

Now you all know Mr. Darwin here; and many of you are probably aware that he's gotten some good press in recent years among Catholic and other theologians. For example, the Georgetown University theologian John Haught has often referred to our modern understanding of evolution as "Darwin's great gift to theology"; and I would certainly agree. But it's important to remember that the simple idea of evolution was not original with Darwin. Darwin's unique contribution was the idea of natural selection (there it is right in the title!). That was and remains the key explanation of how organisms become adapted to their environments; and how that – the fact of adaptation – comes about has always been the big issue. It was Darwin's proposal of selection as a plausible mechanism of adaptive evolution that tipped the balance of scientific opinion in favor of evolution itself.

But I don't want to leave the impression that the fact of evolution by itself doesn't get us very far in theology: it certainly does. For example, assuming there is a God, it constrains the kind of creator and creation that we have to imagine. If creation began with a single event in time, and

if today's living things came about through evolution and not a series of special creations, that implies a single Creator. Since all that happened a long, long time ago, the Creator must have lots of patience! And waiting that long for natural processes to do their thing shows that the Creator respects the autonomy of those processes, including chance, and the things they produce, such as us: God is not a micromanager or a puppeteer. Those points right there rule out an awful lot of the theology done in the past. More specifically pertaining to us, evolution implies that we and the rest of creation form one community that is valuable to God apart from us and demands our protection. There's also the continuity evolution implies between so-called "lower" animals and us, particularly in regard to our mental operations and our behavior; and this continuity is confirmed by the observations of neuroscientists and ethologists. And then that characteristically Darwinian concern with mechanism: that process of mutation and natural selection, implies, among other things, that in continuity with all our ancestors, we too will seek to survive and reproduce and in general put our own "selfish" needs before those of others. But this angle hasn't always been obvious.

I'm sure most of you are familiar with this gentleman too: Fr. Pierre Teilhard de Chardin, who can reasonably be considered the "father" of evolutionary theology. He's had a profound influence on Christian thought in the 20th and now 21st century, by bringing into it the idea of organic, and indeed cosmic, evolution in place of the static, literal reading of the biblical creation stories that had hobbled our thought for centuries – and not just reconciling our theology with the uncomfortable idea of evolution, but using evolution as a positive source for theology that could actually improve our comprehension of revelation and of God's action in the world.

So Teilhard certainly built on Darwin; but the ironic thing was that he did so somewhat indirectly. What I mean is that Teilhard started with the simple fact of evolution – what Darwin called "descent with modification" – and went on from there, mainly theologizing in an eschatological direction, about the grand sweep of evolution on Earth toward the final goal that he called the Omega Point. But natural selection played no discernible part in Teilhard's thinking. There's nothing particularly Darwinian about Teilhard's evolutionary theology – and I think this put Teilhard at a serious disadvantage when he got called on the carpet by his religious superiors.

/+The particular objection that the Roman inquisitors raised was that Teilhard didn't seem to have an adequate explanation for evil and sin. He clearly discarded the story of the literal Adam and Eve and the Garden of Eden, and that seemed to do away with the doctrine of original sin, and with it the Church's whole theory of how Christ provides for our salvation. But when Teilhard tried to account for salvation by Christ within his own, very optimistic concept of evolution toward the Omega Point, he wasn't very convincing – he simply didn't have a clear,

concrete idea of where evil and sin came from and what role they might play in the evolution story.

Why was this? Well, notice his dates: born 1881, died 1955. And he was, of course, French. That means he got his scientific training in France just after the turn of the 20th century, when Gregor Mendel's discoveries in genetics had just themselves been rediscovered, and at a time when Darwin's view of the importance of natural selection had reached a low ebb of acceptance among scientists. It wasn't until the 1930s and '40s that genetics had been fully digested by biology and put together with many other lines of evidence to form what we call the Neo-Darwinian Synthesis, in which selection has regained its rightful prominence, and which remains our dominant paradigm in biology today. But by the '30s and '40s, Teilhard's theological vision had already crystallized, and it reflected French biology in general, which inclined toward French evolutionary ideas like "Neo-Lamarckism" and the vitalistic philosophy of Henri Bergson, but had little use for British notions like Darwin's natural selection.

As a result, Teilhard missed what we now see as the most essential, and most Darwinian, aspect of evolutionary biology. George Gaylord Simpson, himself one of the architects of the Neo-Darwinian Synthesis and a friend of Teilhard's, wrote that "Teilhard never grasped the concept of natural selection." This is where I think Teilhard blew it. As I've written and spoken about at length, it's the self-centered behavior that natural selection necessarily enforces on all living things that accounts, naturally and elegantly, for our congenital inclination to sin, and which has received the name "original sin"; or as I prefer to call it, "original selfishness". This moral evil has literally evolved out of the more general phenomenon of physical evil, meaning physical mishaps of every sort. This includes genetic mutations, which are usually harmful but also provide the raw material for evolution itself; so we have here a general solution to the philosophical "problem of evil". And this "downside" of evolution by natural selection cannot be separated from its "upside", which is the creative process of evolution itself that has produced us and the rest of God's "very good" world of living things. It's this necessary linkage between the "bad" and the "good" in evolution that does away with the whole issue of theodicy and the "problem of evil": God could not have created a material universe in any other way. But to fulfill God's ultimate plan, now that we're here, we are called on to turn away from the law of natural selection or "survival of the fittest" and act selflessly and altruistically. We can count this resolution of the problems of evil and original sin as a prime example of Darwinian contributions to theology.

This point about selection enforcing self-centered behavior, of course, emphasizes the role of competition in evolution, which was central to Darwin's thinking (again, right there in the title: "the struggle for life"). However, it takes us into another controversy of sorts, because cooperation among organisms is also a prominent feature of evolution. So the question arises:

which phenomenon is more fundamental or causally prior? And this question is of theological interest, because a lot of people feel that cooperation is good, but competition and selfishness are bad; so if evolution depends on competition, but we are commanded instead to behave cooperatively and altruistically, there must be something evil about evolution.

In 2006, I argued that "the origins of cooperation and apparent altruism seem explainable in terms of selfishness, and selfishness may have been accompanied (and facilitated) by cooperation right from the beginning; but no one has managed (or, so far as I know, even tried) to explain the origins of selfishness itself in terms of altruism.... Selfishness would thus appear to be the more primitive and fundamental condition, with altruism (if it arises at all) as its later-appearing derivative." [Domning & Hellwig, 2006: 50] However, a few years later, Bob Ulanowicz did just what I had never observed, when he wrote this: "That competition derives from mutuality and not vice versa represents an important inversion in the ontology of actions." [Ulanowicz, 2009: 75] In other words, exactly the opposite of my assertion. Well, Bob and I went back and forth about this over a couple of years, and we finally agreed that this is really a chicken-and-egg situation.

The solution lies in distinguishing different levels of organization. Ulanowicz is right that "competition derives from mutuality" – but from mutuality at a lower level. Within any given level, competition is causally prior, and can bring forth cooperation, which then in turn can spark competition at a third, still higher level. Cooperation emerges, secondarily, at each level as an effective strategy for competing. For example: prokaryotic bacterial cells might unite symbiotically to form a eukaryotic organism, on the cellular level. Such eukaryotic cells might then compete, as separate organisms, until some of them combine to form a multicellular organism of which the eukaryotes are just the constituent cells. Multicellular organisms might then compete among themselves, and eventually combine to form a society or "superorganism", such as an ant colony, within which competition is suppressed in order to facilitate competition with other colonies. And so on.

Another example: a group of people form a cooperative tribe, which competes with a neighboring tribe. Then those two tribes form an alliance to fight the tribe across the river. And so on up the scale. Depending on where in the hierarchy of levels of organization we look, we might find that either cooperation or competition is "primary", either is "derivative". Which one is ultimately, ontologically primary seems to be a question not for biology but for chemistry, at least; and probably for particle physics, if not metaphysics – because both cooperation and competition were arguably present long before the origin of "life" (but that's another story, one that Bob touched on in his talks). Among living things, both cooperation and competition are

adaptive strategies promoted by natural selection, both are part of God's "very good" creation, and both play roles in the process of evolution itself, by which we all got here. So that's the take-home message for theology.

Speaking of that biblical story of creation, recall that in the case of the Garden of Eden (in Genesis chapter 3), natural selection has since been the key to an objectively new understanding of original sin. But Mr. Darwin can also help us in other ways in interpreting the Bible. Later in Genesis (in chapter 22) we find a dramatic example of how a Darwinian style of thinking, even when it doesn't add to Scripture anything really new, can at least cut through a lot of confusion and get to the essentials of the scriptural message. At least it did that for me. The story is the binding or sacrifice of Isaac, known in Hebrew as the Akedah. The background, of course, is that God made a covenant with Abraham, whose wife Sarah was barren, that Abraham would father a great nation and be given a land to dwell in, provided that he and his progeny remained faithful to God. Eventually Sarah gave birth to Isaac, as God had promised; but then God asked Abraham to sacrifice that very child's life. Abraham was in the act of doing so, when God's angel stopped him, and he instead sacrificed a ram in Isaac's place.

And the reaction of commentators ever since has been "What the heck was that all about!?" It's maybe the most scandalous passage in all of Scripture, and has spawned endless speculation and crises of faith for believers in the Abrahamic traditions. What kind of heartless God could make such a request? What kind of father would agree to it? Should he have loved his son more than he loved God? The answers proposed have been all over the map: The story justified a ban on child sacrifice ... Or it was just a horrible example of family dynamics, like a Jewish version of the Oedipus story. Or maybe Abraham had to atone for how he had treated his other son Ishmael and Ishmael's mother Hagar. Or the story symbolizes the "binding" of every Jewish child to the fate of the Jewish people. Or Isaac not only agreed to his own slaughter, but even bound himself. Or he really was slain but then resurrected. Or maybe Abraham was really putting God's morality to the test by agreeing; or maybe he had misunderstood, and God had really just wanted him to bring Isaac up the mountain, not kill him. And of course we also have to consider how Isaac and Sarah felt about all this.

Well ... after reading all these interpretations and more besides, I came to the conclusion that the point was being missed – maybe in some cases because it was too uncomfortable to face. Because when I went back to the lead-up to this incident as Genesis describes it (being the evolutionary biologist that I am), the logic of the whole story made perfect sense to me; and not only that, but it seemed perfectly in line with the Bible's whole account of the Covenant and salvation history. And what scandalized me was the fact that although the story was a

pivotal point of the whole Bible, its message has been effectively neutralized by the simple fact that no one can agree on what it means; so it's basically been bracketed off and set aside!

If instead you approach the story of the Akedah with Darwinian assumptions about human biology and human nature, this is how it looks: it's strictly about the two protagonists, God and Abraham, and them alone. Abraham, like any living creature subject to natural selection, sought to have offspring; but he couldn't, at least not by his wife. This gave God an opening. God is portrayed in the Bible as having a grand plan for the human race that was going to require human cooperation. So God chose this fellow Abraham, who was a man of integrity who seemed like he could be trusted to keep a bargain, and offered him a straightforward deal: "Abraham, I'll not only give you a son; I'll give you more descendants than you can imagine, plus the land and resources they'll need to support themselves, and I'll protect them from now on. In return, you and your descendants have to remain loyal to me, and carry out my plan – specifically, by doing what is right and just [Gen. 18:19]. But if they break this covenant, the deal's off, and they will lose the land and my protection."

Well, Abraham agrees, and eventually Isaac is born – which is the sign that God intends to keep his side of the bargain. But it's only fair that Abraham should show his good faith too. And the test that God puts him to is a very telling but logical one; because this God is a jealous God who intends that nothing in the world or in the human heart should come before God's self – certainly not any of God's own gifts to humankind. So the question to be answered was, which did Abraham value more: his own "Darwinian fitness" as we call it (meaning his hope of posterity), or God's will? In other words: fidelity to the One who made the promise, or idolatry of the promise itself? Here again that challenge: to turn away from the way of nature, the way of the world, and act contrary to one's own selfish interests.

As the story goes, Abraham passed the test, and once again God proved trustworthy, by not requiring Isaac's life after all. The people of Israel lived ever after, though not always happily – because God's promise of the land was conditioned on their remaining as loyal to God as Abraham had been. So for centuries thereafter, their chronicles recorded reverse after reverse and exile after exile, whenever they abandoned the way of the Lord.

To this Darwinian, anyway, this is how the Akedah looks: not mysterious or ethically paradoxical, just a clear, simple bargain, hard but fair; but definitely counter-evolutionary, and the basis for the whole rest of the biblical story of Israel; indeed, the rest of salvation history.

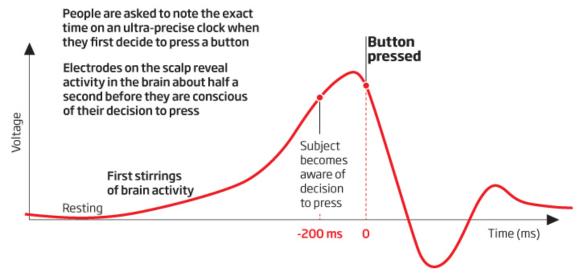
Parenthetically, it also provides the theological background to the story of modern Israel, and the Zionist movement that reclaimed the land of Palestine in the 20th century. The catch here, and the real ethical paradox, is that modern political Zionism began in the 1890s as a secular movement among mostly non-religious, even atheistic European Jews, who nonetheless made

free use of the biblically-based claim to the Promised Land to justify their policies toward the Palestinians. From the 1890s onward, however, many religious Jews have been very vocal in pointing out the contradiction here. As the Israeli historian Ilan Pappé neatly expressed the paradox, the secular founders of Zionism "did not believe in God but He nonetheless promised them Palestine." That promise, of course, still has a string attached about doing what is right and just. In binding Isaac, Abraham bound the nation of Israel to a God of justice. So it can justifiably be asked, will today's Israel honor that counter-evolutionary commitment? (You see, these ideas we're tossing around have more than just academic implications.)

Now, as long as we've started talking about moral theology, we can note in passing that some biologists have called into question the reality of morality's whole basis, namely free will. The name most often mentioned in this connection is Benjamin Libet, a physiologist whose experiments back in the 1980s seemed to show that decisions we make are first made by our

Who's in charge?

This experiment seems to challenge the notion of free will



subconscious (here on the graph), prior to our becoming consciously aware of them (here) and thinking we consciously made them. Libet himself didn't draw this conclusion, but many others have inferred that the reasons for our choices are quite possibly other than we think them to be, and out of our control, so our freedom of choice is an illusion: we just rationalize what we've done after some random interactions of chemicals in our brains, which relieves us of moral responsibility. Well, this is a very complex subject, and these and similar experiments have been criticized in every possible way. For one thing, how "free will" itself should be defined is not as simple as it looks. How exactly, for example, must the will be free, what exactly must the will be free from, in order for us to have free will? There's a large philosophical literature on this subject, and that's before we even get to the layers of complexity in the

experimental methodology. I think the jury is still very much out on how to interpret experiments of this sort.

But one thing a Darwinian can say about such studies of behavior is that natural selection has the last word. Many times we have to make split-second decisions with life-or-death consequences – like when facing a predator, or driving on the Beltway. Whatever data or mental processes we use have to be tightly bound to the real world, and in that sense are trustworthy, at least in general. So we should not be bothered by evidence that our brains might be analyzing a situation even before we are conscious of it, and biasing our conscious decisions toward a particular course of action: the chances are good that it will be an adaptive course of action. It's like an efficient staff generating a recommendation for the chief executive, who then makes the decision: she trusts and relies on her staff, even though she may sometimes overrule them. And the longer we have to ponder a decision, the more chance there is to weigh the moral pros and cons along with the pragmatic ones, and for our decision to be not only rational but truly free.

Still, some evolutionary biologists insist that natural selection has molded us to behave in certain ways – altruistically, for instance – while remaining unconscious that our true motives are evolutionarily-selfish ones. Our mental processes may very well include all sorts of mechanisms for self-deception aimed at getting us to behave in adaptive ways; it's our behavior that counts, after all, not whether we understand it. Therefore, they say, the objectivity of our thoughts is highly suspect at best, above all in matters of religious belief, which can often be shown to serve the selfish interests of individuals or social elites. This argument undermines belief in free will and moral responsibility as well. But I think this is jumping to too broad a conclusion. What studies really seem to show is that self-deception is adaptive only in the narrow social context of attempts to deceive others: I'm a more convincing liar, for example, if I've first convinced myself that I'm telling the truth. In general, we can access non-deceptive mental processes whenever we wish to take a truly hard, critical look at our own behavior. To the Darwinian, it's objectivity that is ultimately the most adaptive.

Now when it comes to this sort of self-examination, Mr. Darwin can even give us insights into spirituality. (And since I'm giving this talk at Loyola, I also have to give credit to the Jesuits!) For example, in the Second Week of his *Spiritual Exercises*, St. Ignatius Loyola presents the meditation on the Two Standards: the choice between following the way of Christ or the way of Satan. Ignatius, the former combat soldier, described this choice under the metaphor of the "standards" or banners to which the troops of rival leaders would rally in the confusion of battle. But if his 16th-century romantic imagery of knights in battle doesn't appeal to your spiritual sensibilities, maybe something more concrete and down-to-earth may help.

In the Gospels we find many passages where Jesus tells us in various ways, but very plainly, that "Whoever wishes to be [his] follower must deny his very self." Now that you're reading this with a Darwinian mindset, it's obvious that he's saying that to build the Kingdom, carry out that grand plan that God had in mind even back in Abraham's day, we must stop following the rule of the "survival of the fittest", the "way of the world" here in John's Gospel, and follow instead the rule of altruism or Christian love: rally to the standard of Christ, not to that of the Prince of This World. This is a radical break with the old rules of the game, a genuine turning point in human evolution; and St. Paul, in Second Corinthians [5:17], got it when he said: "if anyone is in Christ, he is a new creation. The old order has passed away; now all is new!"

Well, turning from what Paul called the "new" to something so much newer it hasn't even happened yet, we find that theologians have already been challenged about what they'll say if it turns out that extraterrestrials exist! Rather than spend much time on this, I'll just let Jack Haught respond that it won't be a problem, because at least evolutionary theology has "already enthusiastically embraced the Darwinian portrait of life." (Well, I mentioned that Teilhard wasn't a full-blown Darwinian, but he accepted Darwin's "descent with modification", which is enough for this purpose.) So we can be sure that E.T., as a fellow creature of God, will have the same existential concerns that we do, and "be no less potentially religious than we are", as Haught has said [Haught, p. 172].

A bigger and more timely and practical theological topic that also very much involves Mr. Darwin is the creation-evolution controversy. Why is it that this still goes on generation after generation, no matter how much evidence for evolution scientists come up with? What is it that drives this argument and continues to fuel it after all this time?

One good place to find the answer is here at the Creation Museum, right across the river from Cincinnati and just up the road from the famous fossil locality of Big Bone Lick, Kentucky. When you walk in, one of the first displays you see tells you what the controversy is really all about; and it isn't about science. It poses these questions: "Can someone help me? Why am I here? Am I alone? Why do I suffer? Is there any hope? Why do we have to die?" In other words, those big existential questions that every thinking human (or extraterrestrial) confronts; and we can add others that are obvious, like: What happens after we die? Is there a God? Why is there evil in the world? And then the challenge: "Do different starting points matter in our personal lives?" The creationist answer, of course, is yes: If you start with evolution, you get answers to these questions that offer no hope whatsoever. If you read very much creationist literature, you'll find it clearly stated that this is the driving force behind creationism – the desire for answers to these questions that people can live with. And that's a perfectly reasonable desire that all of us share. Of course, the rest of that literature, and the rest of this museum, go on to try to persuade you that only the creationist interpretation of the scientific evidence is correct,

and that the evolutionists, represented by atheists like Richard Dawkins, are wrong. But these existential questions are the crucial ones. I don't believe that the average layperson, even one who answers to the name "creationist", lies awake at night pondering punctuated equilibrium, or the basis of radiometric dating, or how DNA is used to construct phylogenies. It's these sorts of questions that keep us awake. And the one big thing that the creationists and the Dawkinses absolutely agree on is that evolution offers no hope: there is no God; there is no afterlife; there is no comfort for the suffering; so just deal with it! No wonder the creationists are upset.

So we have to address these legitimate theological concerns. As long as evolutionists just pile up more scientific evidence for evolution, we'll just keep talking past each other. However, I think I see a way forward. An unknown but likely sizable number of people who belong to evangelical churches are not irrevocably wedded to literal interpretation of the Bible. They align with creationism because they've been told that's the only alternative to Dawkins-style atheistic evolutionism, which won't do anything for their existential concerns. But what if they were shown that these two views (creationism and atheism) are just the extremes of a very broad spectrum?

This spectrum is routinely underestimated, at least in the mass media. Take, for instance, the questions that the Gallup Poll has been using for decades. They offer only three choices: evolution guided by God; evolution with no participation by God; and young-earth creationism. And as you see, the poll results have been pretty steady all along, with about half of Americans accepting some sort of evolution. To keep the results comparable over time, the Gallup folks never change the questions; but I for one find these questions very unsatisfactory.

Let's look at them more closely. The young-earth option is pretty unambiguous, and you might think the other two are simply theistic evolution and atheistic evolution, respectively. But if I had to say which comes closest to my own view, I'd have to choose "evolution not guided by God" — even though I'm a theist, and that lumps me together with the atheists. So this set of options does not do justice to the full range of opinions.

Let's see if we can improve on it. Well, between the first and second choices, we have to make room for all the old-earth creationists, with their day-age and gap theories, and maybe some of the Intelligent Designers too. And then we have to distinguish evolution guided by an interventionist, micro-managing, designing God from evolution by natural laws sustained by a more hands-off God. (This would be my choice.) Saying God had no part at all in the process is ambiguous: is there a Deist God who starts the world going and then leaves; or is there really no God at all? So to clarify, we should add one last choice to satisfy the atheists. And I'm sure we could divide up the spectrum even more finely if we put our minds to it; but at least this gives you a sense that people's opinions about this are all over the map, with creationism and atheism way out on the edges of the map.

The take-home message here is that the very wide middle of that map is made up of theistic evolutionists in the broad sense: people who believe there is a God (at least one) and that evolution is just how God creates. Some of these folks, like the Intelligent Designers, will quibble over how much of today's science they accept; but for the most part these theistic evolutionists are more or less comfortable with both science and mainline Judeo-Christian theology. That means they have found ways of satisfying their existential concerns within the context of accepting some kind of evolution. Just think: if all the people who call themselves creationists – but without necessarily thinking their faith depends non-negotiably on biblical literalism – if all of them were made consciously aware of this range of options, how many might find something here they could live with?

Of course, a lot of theologians today (especially though not exclusively Catholics) go further than that, saying evolution is not just something Christians can put up with, but a positive source for new developments: even "Darwin's great gift to theology"! And for over half a century, this has been stimulating that great flood of new thinking that we call "evolutionary theology."

To sum up, I'll just quickly outline some specs of the kind of "non-interventionist theistic evolution" that is widely discussed and accepted today:

- 1. God created the universe, and it's still a work in progress.
- 2. God allows the universe to run according to its own laws, including chance, and thereby to be, along with God, an autonomous co-creator of new and wonderful things: God allows, even invites, the universe to participate in its own creation!
- 3. Those laws of nature include Darwinian natural selection, which is the creative force in organic evolution but also results in suffering, death, and the innate selfish behavior that inclines us all to sin. These "bad" things are inseparable from any kind of material creation imaginable, so God could not have made a material creation in which bad stuff did not happen. (This is an important way in which evolutionary theology improves on what we've had before; there's no more need to agonize over the so-called "problem of evil", or to "justify the ways of God to men", as Milton put it.)
- 4. Like the parent of a wayward adult, God can only suffer *with* suffering or sinful creatures, and offer advice and help (or *grace*), but without interfering in their free choices.
- 5. God is passionately interested in what goes on here, but stays beyond the reach of empirical science, allowing us the space to become other than God and not just God's puppets, and therefore enabling us to be capable of deep relationship with God.

- 6. By precept and example, God offers us salvation from the futile Darwinian rat-race that was necessary to create us. Rather than obeying that law of "survival of the fittest", we are supposed to nurture the weakest and do all that social justice requires.
- 7. God does not "design" us in detail, or coerce or otherwise manipulate us, but seeks to persuade us to do these things, always respecting our freedom and encouraging our creativity.
- 8. The Incarnation is God's seal of approval on the goodness of the material creation.
- 9. Finally, because (as St. Paul said) "all creation groans" for release from (Darwinian) futility [Romans 8:18-23], its (and our) ultimate hope lies in "new heavens and a new earth" [Isaiah 65:17, etc.] and a bodily resurrection of the whole person by God's grace following our death (not of just an immortal, self-subsistent "soul", which no longer seems to be a useful concept).

Again, all this is just one possible version of contemporary evolutionary theology, which is very much in the Judeo-Christian mainstream. I think it does a pretty good job of covering those burning existential questions we started out with, and it conflicts in no way with the actual science of evolution (which we have to distinguish from the metaphysical inferences that Dr. Dawkins misrepresents as science). Obviously, these are faith-based statements, and not derived from evolutionary biology, but (like the way Bob Ulanowicz explained to us that natural laws work) they operate within those boundary conditions set by science that we listed at the beginning.

Now consider once more: given that roughly half of the American public accepts some form of evolution – and given that a good many of even the self-identified creationists might be willing to rethink their biblical literalism if they were shown an alternative that: involved evolution; allowed them to accept modern science; and helped them resolve what philosopher Robert Pennock calls their "crisis of meaning" – then might this be a way of doing that? Pennock suggests that we "Ask creationists what they believe our purpose [in life] to be and then ask why we should fear that our evolutionary origin precludes our fulfilling it. Surely nothing of value is necessarily lost by acknowledging the truth of evolution" [Pennock, 1997, *Creation/Evolution* 39: 28]. So it might be worth a try to make them aware that there are alternatives well within the realm of theology that they might not have considered. Because after all, nothing – not even Mr. Darwin or evolution – can separate us from the love of God. On the contrary, I give Mr. Darwin a lot of credit for helping us get to an understanding of our theology that is not only consistent with today's science, but more clear and coherent within itself.

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