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THE INTELLIGENT DESIGN MOVEMENT PART [PART II]

Trevor Major

[EDITOR'S NOTE: Part I of this two-part series appeared in the October issue. Part II follows below and continues, without introductory comments, where the first article ended.]

"Intelligent Design"

William A. Dembski, one of the leading figures in the intelligent design movement, uses the term "design" to denote (1999, p. 127):

1. the scientific theory that distinguishes intelligent agency from natural causes;
2. what it is about intelligently produced objects that enables us to tell that they are intelligently produced and not simply the result of natural causes; and
3. intelligent agency itself.

All these uses, you will notice, make some reference to intelligence. Why should intelligence provide the logical foil to nature? Recall our earlier discussion on the definition of "natural." One way to define this term is to say that it denotes something that is not artificial. A natural thing is the product of nature, whereas an artifact is the product of design. An artifact is a contrivance; it results from a decision to use skills or learned knowledge. Nature cannot learn, or make decisions. Moreover, only agents can have the intention to act upon something else. Nature is acted upon; it cannot have intentions. Only agents can have a purpose–a reason for acting. To be able to reason is a mark of intelligence. Recall also that the natural excludes minds and intelligences. Dembski emphasizes this point by talking repeatedly of **intelligent** agency and **intelligent** design.

Where we see evidence of design, we look for an agent. The blob of clay that little Johnny fashioned in art class is an artifact, but so is a jet airplane or a beaver's dam. Each of these objects reflects different levels of skill, but that is not the issue. Each of these objects was made from natural things, but that is not the issue either. Even something like, say, polyester–that wonder of manmade materials–ultimately must come from something in this world. The real question is this: Is there anything about Johnny's masterpiece that would distinguish it from any other object that has not received the purposeful attentions of an intelligent agent?

What if we cannot detect signs of intelligent design, even when we know that Johnny made his piece of art in school today? This false negative is not as much of a concern as a false positive (see Dembski, 1999, pp. 139-144). In Johnny's case, we have background knowledge of his artistic endeavors. We might find a similar blob of clay on another occasion and wonder if Johnny has been busy again, but we might not know one way or the other. When we are actually on the lookout for design, and dump an artifact in the box marked "naturally caused," we then have reached a false, negative conclusion about that object. In fact, for all we know Johnny is at the vanguard of a new movement in ceramics that seeks, on purpose, to create objects indistinguishable from nature. An intelligent, designing mind can do that, if it wants to.

However, if we find an object that appears to show signs of intelligence and we put it in the box marked "designed," then we might have reached a false positive. The concern on the part of epistemic naturalists is that theists are partial to such false positives–viz., they have an almost uncontrollable urge to credit God with the design of undesigned things. As I noted earlier, this view is based on bad theology. And besides, God is not the automatic conclusion. All we have to do is determine whether the cause is intelligent. Nonetheless, epistemic naturalists have raised the avoidance of false positives to a virtue. This is why Richard Dawkins can admit that living things have the **appearance** of being designed, while expressing confidence–given his decision to eliminate intelligent causes *a priori*–that none of these things will end up in the wrong box.

Inferring Design

Dembski's contribution is to address this fear of false positives by proposing a three-stage explanatory filter. He provides a rigorous proof in his technical monograph, *The Design Inference* (1998). A more accessible treatment of the subject can be found in his book, *Intelligent Design* (1999), to which I have referred previously.

Basically (and I emphasize that word so as not to underestimate the very precise formulation that Dembski has offered in his writings), there are three questions to ask of anything before we can say it is the product of necessity, chance, or design (Dembski,

CONTENTS

ARTICLES

DEPARTMENTS

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Editor:
Bert Thompson, Ph.D.

Associate Editor:
Trevor Major, M.Sc., M.A.

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1999, pp. 127-133). First, is it **contingent**? In other words, is it the case that the event **had** to happen, or that the object **had** to appear? If so, then it is necessary, not contingent. For example, when sodium and chloride ions are dissolved in water, and the water evaporates, salt crystals remain behind. This process follows a regular, law-like behavior. No matter how many times we repeat this experiment, the ingredients assemble themselves into tiny, cubic structures. An understanding of the underlying physics establishes the fact that they must form these crystals, which means they meet the criteria for necessity, not design. Something that is designed—that is the result of an agent making a decision—is contingent.

Second, is the object or event **complex**? The idea here is to trap any object that appears to be contingent, but, in fact, could be produced by chance. Basically (there's that word again), a simple object or a short series of events has a high probability of producing something that might appear to be the product of design. For instance, if we were to paint the letters of the alphabet on the backs of house flies, we might observe that sometimes, when they alighted on the wall next to each other, the sequence of letters formed recognizable English words. On one occasion, for instance, we might observe the sequence "NO." However, there is a high probability that two letters, when set next to each other, will form a word. So while there is nothing necessary about this arrangement, it is not sufficiently complex to pass any further through the explanatory filter.

Which brings us to the third and final question: Is the object or event **specified**? For instance, the guides who lead cave tours frequently draw visitors' attention to stalagmites, stalactites, and other natural formations that appear to represent faces, coastlines, animals, or other recognizable objects. True, this often involves a healthy imagination, and we entertain few doubts that these shapes are the product of purely natural causes—namely, the random accumulation of calcite deposits. But we cannot afford to be too hasty. What if we were to wander into a cave and find consecutive shapes showing a reasonable likeness of the first forty American presidents arranged in chronological order? It is difficult indeed to imagine what law-like behavior could result in such a phenomenon. Additionally, forty shapes might seem sufficiently complex because there are many different ways to arrange a sequence of this length. But is it "specified"? By this, Dembski means that the sequence exhibits a suitable pattern, which, in this particular example, would be the presidents arranged in chronological order. If the images were somewhat vague, and the Washington-looking rock came after the Reagan-looking rock, we might have reason to believe that our enthusiastic tour guide could have made this sequence of shapes fit practically **any** pattern. If so, we would have a case of *ad hoc* fabrication, not a pattern showing proper specification.

In addition, the fact that no one predicted that this pattern was going to appear before the sequence was discovered does not matter. What does matter is that the historical order of presidents is independent of, or detachable from, the pattern we can see on the cave wall. For instance, we might discover (in regard to the cave wall pattern) that the seemingly random dripping of mineral-rich waters actually is being controlled by something above ground, which just happens to be the city of Washington, D.C. If so, then there might be no detachability, and thus no inference to design.

A couple of comments are in order. Note that the nature of the designer is not a concern. Whether the presidential display is the work of a high-school art class, or some reclusive, strange history buff with a penchant for sculpting limestone caves, does not matter. The explanatory filter works only to determine whether a designer is the **most likely cause**. Further, if design is suspected in nature, there is no appeal to miracles, but only to what the evidence may or may not suggest about an intelligent agency.

Note, also, that the explanatory filter can produce false negatives by failing to recognize objects, such as Johnny's clay figurine, that were the product of intelligent agency. At the same time, it is unlikely, although not impossible, to arrive at a false positive—i.e., to allow something through the sieve that was, in fact, produced by wholly natural causes. Even so, there is nothing to stop the test being run again when new evidence comes to light. Something that once was thought to be designed might, on further examination, turn out to be the product of natural causes.

Intuitively, we know that design cannot be a concept that is foreign to science because there are disciplines of a scientific nature that seek to tease apart natural causes from intelligent agency. Dembski is not proposing a change in the way that these scientists work. All he has done is to formalize the process that they (and many of us) already use, and to show that the process can detect design in a reliable fashion.

One such discipline is forensic science. A typical task of forensic investigators is to determine the cause of death: Was it natural or suspicious? Should they be looking for a person—an agent—who caused this death? Another science is archaeology, which on a regular basis must distinguish genuine artifacts from stones, sticks, and other items that so often clutter excavation sites. One of the best-known examples of design detection is SETI (the Search for Extraterrestrial Intelligence). The late Carl Sagan promoted this ongoing research program and featured it in his novel, *Contact*. This fictional work, which became a major motion picture starring actress Jodie Foster, provides a great angle on Dembski's explanatory filter. The goal of the SETI program is to detect the activity of intelligent beings among the avalanche of radio noise arriving from outer space. The very existence of SETI proves that even self-confessed materialists (like Sagan) have well-honed intuitions when it comes to the detection of intelligent agency. All of these disciplines—forensic science, archaeology, and SETI—dispel the notion that science, by definition, cannot look for intelligent causes.

Updating Paley

Still, the objection is going to be this: We know there are people, but the existence of God is controversial. As Ernest Nagel has argued, "We have never run across a watch which has not been deliberately made by someone" (1992, p. 213). In other words, we know that there is a watchmaker; we do not know that there is a World Maker. But this begs the question, "Is there a World Maker?" There is no obvious way to get from "We don't know" to "It cannot be."

The skeptics likely will respond, "Yes, but there are plenty of reasons to deny that nature is the product of an intelligent cause." Their favorite approach, at least going as far back as David Hume (and progressing forward to Charles Darwin, Stephen Jay Gould, et al.), is to point out the imperfections of nature. But this objection misses the mark entirely. If a watch does not keep time, then is it any less the product of an intelligent designer? The only way around this response is to say that, if there were a Creator-God, He must be pretty inept. Of course, this concedes that a Creator is at least a possibility. As for His being inept, that is another matter. How can we know that the less-than-perfect or "suboptimal" organ, system, or structure has not become so through time? My watch may be losing time now, but it might have run perfectly well before I dunked it in the ocean. And second, suboptimality is in the eye of the beholder. For instance, Gould is famous for talking about what he perceives to be the panda's "clumsy" pseudothumb but, in fact, this particular appendage is an efficient tool for holding bamboo shoots and stripping off leaves (Thompson, 1991).

How does talk about intelligent design differ from William Paley's famous watchmaker argument? In its essential features, very little. As you may remember, Paley told the story of a man who found a stone and concluded rightly that it was a product of nature. Then this man found a watch and concluded (also rightly) that it was the product of a designer—a watchmaker. To hear the skeptics tell it, Paley's arguments were crushed historically between Hume's refutation **in principle** and Darwin's refutation **in fact**.

Nothing could be farther from the truth. Ironically, Paley's argument relied on Hume's principle of "uniform experience" to argue that wherever we see the "marks of contrivance, we are led for its cause to an **intelligent** author" (1802, p. 232, emp. in orig.). As for both Hume and Darwin, Paley argued that we do not need perfection, nor a clear understanding of function, to see evidence of design.

If we are going to de-emphasize Paley, it is on three grounds (Behe, 1996, pp. 211-216). The first is a matter of strategy. People have heard Paley put down so much that it is hard to get past centuries of prejudice. Second, although Paley used the best science available, some of his examples have not withstood the test of time (and on occasion he did tend toward overstatement of his case). Paley's arguments need to be recast in the light of contemporary science and more judicious examples.

Third, when Paley used a watch as an analogy, he would describe a system of interacting components. Take away one wheel, one cog, or one gear, and the whole system would cease to function. Yet the best **biological** examples used by Paley, and the popular examples we tend to use today, are at the level of gross anatomy. In a way, these arguments can sound very compelling. The vertebrate eye, for example, has a number of discrete components: the lens, retina, muscles, pupil, and optic nerve. If any one of these parts is missing or damaged, vision is not possible.

The standard response since Darwin is to suppose that the eye could have been built component by component. It is easier for nature to take small steps, creating each part individually, than to take a giant leap creating an integrated whole. Richard Dawkins argued along these lines in his book, *Climbing Mount Improbable* (1996). All we need, according to this argument, is for the right components to come together at the right place and at the right time. The evolutionist presses his point with an analogy that goes something like this: begin with an English word, replace some of the letters and, just by chance, another English word can be reached after a number of steps. The following is a simple example:

BELIEVE
ELIEVE
EVLIEVE
EVLIVE
EVOLIVE
EVOLVE

By analogy, the argument goes, biology can produce something new and functional via the step-wise rearrangement of DNA bases, amino acids, or the components of an anatomical system. Dawkins suspects that nature "seems" designed because all we are seeing is the end product.

There are several problems with this analogy. First, there is a kind of "cheating" going on. The Dawkins fan who created the word puzzle above had a target, or goal, in mind. But, as Dawkins himself insists, evolution is blind; it is completely nonpurposive and undesigned. Nature has no "mind" in which it can visualize and formulate goals. Evolution's equivalent to the Dawkins-like game would have Nature peeking through a tear in its blindfold. This is the same mistake Darwin made in his analogy from artificial selection. By definition, the farmer or

agricultural researcher has a goal in mind, whether it be drought-resistant wheat or higher milk fat production.

Incidentally, evolutionists draw attention to the use of this technique in fields such as chemical engineering, software programs, and origin-of-life experiments. In each case, the idea is to generate a huge number of variations and then, along the way, test to see which one best meets the goals laid out at the beginning of the experiment. Often, such techniques are called "Darwinian" or "evolutionary." That they work in the "real world" of business and technology is supposed to legitimize evolution as a useful endeavor and a pervasive feature of our world. But in all of these examples, there is a clear goal in mind. As long as there is a goal, we are not dealing with long-term, large-scale evolution as Darwin envisioned it. This is merely another version of the shell game that I mentioned in Part I of this series.

Second, and more significantly, you will notice that none of the intermediate words in this game has any meaning. The words "believe" and "evolve" are known to play a role in our language. But the intervening words are nonsense; they serve no purpose whatsoever in our language. Imagine, then, that the word "believe" corresponds to a biological system of some kind, and that the life of an organism depends on possessing one of these BELIEVEs. If it lost the B part, and was left with an ELIEVE, the system would break down, and the organism would die. Death, to put it bluntly, is not a good survival mechanism.

Behe's counter-response to the evolutionists is to apply Paley's watch analogy to more suitable biological examples. The components should not be discrete, nor self-contained, but should be essential to the functioning of the system. In this way, there are no "steps" to the functionality we see here and now; the system must appear—suddenly—in its entirety.

Black Boxes

To make the analogy stronger, Behe urges that creationists no longer employ arguments using gross anatomy. Although he believes it is unlikely that nature assembled the components of vertebrate vision, for instance, he thinks that evolutionist still could make a plausible, step-wise argument. Or, consider the panda's pseudothumb. Ideally, we want to suggest that this appendage certainly is well designed. But, Behe argues, we cannot make a case for design unless we show that the parts could not have come together by, say, fortuitous mutations.

At first glance, such an argument might seem to concede too much. However, Behe is not suggesting that the panda's pseudothumb came about accidentally; rather, he is arguing only that it remains to be shown that it did, or did not, come together accidentally. So Darwinists and design theorists are in the same boat until all the evidence is in. In Behe-speak, the various parts that compose the panda's "thumb" might turn out to be a collection of discrete systems—what he refers to as "black boxes" (a term borrowed from engineers). For instance, I can install a hard drive in my computer without having to coat any disks, solder any wires, or write any programs. As far as I am concerned, my hard drive is just one black box that can be hooked up to a number of other black boxes that make up my computer.

What we are looking for instead, Behe argues, is not just complex arrangement of parts, but **irreducible** complexity. We want to dig down deep enough until we find no more black boxes. With sufficient knowledge, for instance, I could analyze my hard drive and see, perhaps, that there were no further subsystems. I might learn that it could not work without the platters, the heads, or the on-board controller. It does not matter whether the case is made of aluminum or gold, or whether there are six platters or only one. Just like with Paley's watch, all of the interacting parts must be present for the system to function properly.

When you stop to think about it, creationists need that "out." We need to be able to say that, on the gross anatomical level, certain modified or novel structures can be the result of random mutations, and that natural selection could preserve those mutations that are not harmful to the organism. For instance, the Bactrian camel has two humps, while the Arabian camel has only one. Clearly, a structure (a second hump) appears on the one camel that does not appear on the other. But why? Perhaps God created each species separately, or perhaps nature has produced a variation on a theme. To deny the second option outright is to say, in effect, that species are fixed (a concept that is difficult, if not impossible, to defend; see Major, 1993). What we want to allow is that variation **is** possible, and that new species **can** arise, but that the **amount** of variation (i.e., microevolution) is limited unless we can add new information. Perhaps the second hump of the Bactrian camel, considered structurally, is no different from its first hump, and thus adds no more information. So, yes, God could have created these two camel species, but it also is possible that the second hump is nothing more than a cobbling together of existing structures by mutation (or, conversely, is the end result of a mutation that reduced the original number of humps).

However, to suggest that camels' humps and pandas' "thumbs" have resulted from the cobbling together of black boxes does not prove macroevolution. To suggest that it does is to make the same mistake as Darwin, Dawkins, and others who would "explain" the eye by putting together a number of discrete components. But this sidesteps the question of how the components came together to make all those black boxes in the first place.

For Behe, the crucial arguments about irreducible complexity will take place at the level of biochemistry—an area of science that was not available to either Paley or Darwin. In the opening pages of his book, Dr. Behe talks about the biochemistry of vision within the retina. We now know, he says, that the retina is at the level of a black box, which means the biochemistry of vision is irreducibly complex. Take out one step at the biochemical level, and vision is not possible. You cannot cobble these parts together; all the components have to be present and interacting at once in order for the system to work. That is something that neo-Darwinian evolution is ill-equipped to explain.

Behe's search for irreducible complexity is the equivalent of Dembski's specification-complexity criterion described earlier. His efforts to rule out random mutations, for instance, parallel Dembski's discussion of chance and complexity. This work is an example of putting intelligent design into practice as a research program (Dembski, 1999, p. 228). Similar efforts within the ID movement seek to move beyond the conceptual issues addressed by Johnson, Dembski, and others (see Johnson, 2000, pp. 14-15).

CONCLUSION

The purpose of this review has been to highlight the positive aspects of the intelligent design movement. Admittedly, there are some off-putting aspects as well. All I can do at this point is encourage readers to exercise due regard, as they should with any human author.

Allow me to relate a personal experience with the ID movement. When I first heard Phillip Johnson make his pitch for intelligent design at the International Conference on Creationism in 1994, I came away with severe misgivings. At different times during his speech (e.g., when he was attacking naturalism), I found myself in hearty agreement. At other times, I wondered what on Earth he was doing there. Here he was, at the premier meeting of young-Earth creationists, telling his listeners that they were wasting their time on the age-of-the-Earth issue. It led to splintering and factionalism within the religious community, he said, and is not relevant to the dominant culture. He explained his personal decision to remove the debate from the Bible-science context or, more specifically, any defense of the Genesis account. Here is my own transcript of this point from the speech he gave that night:

> And so I thought it was tremendously important to focus on the scientific and philosophical issues, and so I declared at the beginning that I would not discuss the biblical account at all, or have anything to say about it, and to completely put behind any question about matters such as the age of the earth....my approach will be just simply to take for granted as an assumption of whatever the authorities wanted to say on that point.

Johnson altered his view slightly when a young-Earth creationist friend reminded him that those same authorities were the ones who dogmatically asserted that materialistic evolution is a "fact." Since then, he has softened his stance toward young-Earth creationists to the point that he resists attempts to marginalize this group within the ID camp. Anyone who has challenged the suggestion of the alleged factuality of evolution has been shunned by the gatekeepers of scientific orthodoxy. It would be ironic, to say the least, if the same kind of treatment then were extended by some within the ID movement to those (i.e., young-Earth creationists) who definitely are allies of that movement. Indeed, Johnson now envisions a Big Tent approach in which all the opponents of epistemic naturalism can gather, regardless of whether they are young-Earth or old-Earth creationists. And as strange as it may sound at first, Johnson even would welcome nontheists, as long as they admitted to being skeptical of epistemic naturalism.

Our task is to separate the wheat from the chaff—to use the best that the ID movement has to offer, while at the same time retaining an innate respect for the Bible's specific teachings regarding the age of the Earth and related matters. There is much to be gained by tapping into arguments that are able to refine the concept of inherent design—a concept that, after all, is a core belief of young-Earth creationism.

There also is a place for framing the debate in terms of Intelligent Design vs. Naturalism. It represents a way to deal with evolution in various contexts, such as public schools, where any mention of God or the Bible closes the door to any further discussion. Most important, perhaps, it is a way to diagnose and teach our brethren who have adopted epistemic naturalism, and yet do not comprehend or understand the tensions they have created within their own faith.

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ERRATUM

In the May 2000 issue of *R&R* (Part III of our series on "The Origin, Nature, and Destiny of the Soul"), there is a typographical error on page one, column three, line eleven under the heading, "Universalism." The text reads (beginning with line ten), "...as well as a Sovereign Who desires mercy rather than sacrifice (**John** 9:13)." The biblical reference should be to **Matthew** 9:13, not John 9:13. Please make this correction on your copy and accept our apology for this inadvertent error.

WHAT NOW? IMPLICATIONS OF THE HUMAN GENOME PROJECT

Trevor Major

The ultimate goal of the Human Genome Project is to understand what makes us tick genetically. As a scientific enterprise, it presents no more ethical difficulty than research on blood types or the workings of our liver. However, the **applications** of this new understanding raise important ethical concerns.

Several key issues have dominated the public arena thus far. Chief among these is the question of **privacy**. If it is true that "knowledge is power," should anyone know so much about our genetic makeup? A second issue is one of **ownership**. Who owns my genetic code, or a particular gene found in all humans? Is it right to patent "wild genes"—genes that were discovered in nature and not "invented" or modified by man? A third issue concerns the **engineering** of DNA in germ cells. With this technique, known as "germline gene transfer," parents could make selective changes on their own sperm and egg—a mutant gene fixed here, a gene for high IQ spliced in there. Will this possibly lead to eugenics? Will it discriminate against the poor? These kinds of questions excite the public imagination and express themselves in disturbing images of the future, such as those in the movie *Gattaca*.

A more pressing issue for Christians is genetic screening. This can take the form of prenatal testing where the DNA of prospective parents is scanned for genetic diseases. A woman with a family history of hemophilia, for instance, might want to know whether she carries a gene that causes a failure to produce "factor VIII"—a critical blood-clotting protein. The defective gene responsible for hemophilia is recessive and resides solely on the X chromosome. This means that a woman could carry the disease on one of her X chromosomes, while a functioning copy resides on her other X chromosome. Unfortunately, the 50/50 mix of damaged and functional genes translates into a 50/50 chance of her children inheriting the disease.

Sons are of particular concern in these cases. As males, they inherit an X chromosome from the mother and a Y chromosome from the father, but the Y chromosome does not bear copies of the coagulant-producing gene. Without an alternate source for factor VIII, the body's natural response to bleeding breaks down and even minor injuries can become life threatening.

What are the options? If our prospective mother learns that she carries hemophilia, she and her husband could decide against having any children at all. Or, if the woman does become pregnant, she could undergo amniocentesis—a process that involves the extraction and testing of fetal cells. Often, whether stated or not, the assumption of such testing is that abortion will follow the discovery of genetic abnormalities. Dr. Norman Gant, while serving as chairman of obstetrics and gynecology at the Health Science Center of the University of Texas, once remarked in this regard: "We are able to give our parents information on which to base real choices about continuing or terminating a pregnancy, and it is very reassuring to them during the remainder of their pregnancies" (1980, 87[3]:33; see also Rae, 1997, p. 138). If carried through, this most assuredly would contravene God's laws against the taking of innocent human life (Proverbs 6:17).

New technology, however, could expand those options. Germ-line gene therapy, as we have seen already, could be used to repair the gene before conception. However, this probably would be followed by *in vitro* fertilization (IVF), which itself raises a host of ethical concerns (see Thompson, 1999, pp. 34ff.). Another possibility is gene therapy on someone already suffering from the disease. Recent studies have shown promise in treating hemophilia with viruses that can "infect" the host's cells with a corrected version of the gene (Kay and High, 1999).

These mixed results typify the two-edged sword of modern technology. The fruits of the Human Genome Project could provide us with revolutionary new treatments or, at the very least, more information that we then could use to make critical decisions. At the same time, this newfound knowledge could lead indirectly to greater use of technologies, such as IVF and abortion, which present an immediate threat to the sanctity of human life. While certain scientific developments might make IVF more palatable (such as, for example, avoiding the production of "spare" embryos), abortion will remain inherently unethical. At present, women who decide to abort on the basis of their child's health constitute a tiny fraction of all abortions (see Torres and Forrest, 1988; Bankole, et al., 1998). This could change, of course, if our ability to **detect** the disease outstrips our ability to **treat** the disease.

All of the issues discussed thus far center on potential applications of the information provided via the Human Genome Project. However, there are some deeper ethical concerns.

First, we have to watch our motivations as we use this new information. For instance, genetic prescreening, especially where there is a family history of genetic diseases, seems well within the bounds of Christian stewardship. A possible analogy is Paul's advice that Christians remain celibate in the face of persecution (1 Corinthians 7:26-28). This is not the only reason to remain single, but it shows the Christian way of thinking through such problems. Likewise, there could be situations in which parents decide, after much study and prayer, to remain childless.

Yet, by opening up new vistas, technology tempts us with potential new rationalizations. Specifically, our reasons for having children could become contingent on technology. A child becomes, not an expression of unconditional love, but something merely tentative (Meilaender, 1996, pp. 53-56). The worthy ambition of not bringing further suffering into the world eases us gently into the conviction that the only child worth having is a healthy child. A couple enters into a pregnancy knowing full well that there is a 50/50

chance of having a child with something like, say, hemophilia, and yet plays a waiting game: "Let's see what happens," they reason, "and we'll terminate the pregnancy if things don't go our way." What we lose in the end is our doctrine of *imago Dei*—of being created in God's image. It is this doctrine, which gives intrinsic value to human life, that must motivate our decisions on life and death.

A second, closely related issue is the temptation to think that we are **just** our genes. Instead of blaming the devil, we choose to blame our genetic heritage—the old refrain, "My genes made me do it."

A constant stream of far-fetched claims does nothing to help this crude form of genetic determinism. If the fabled accounts in newspapers are anything to go by, scientists have discovered "genes for" alcoholism and homosexuality. You might as well say that the Y chromosome must contain a "gene for" violence, given that being male is the best predictor of violent behavior.

Critics of genetic determinism point out that many traits involve multiple genes, some of which are influenced or triggered by external stimuli. When we are told that intelligence has a genetic component, these same critics are quick to assure us that various nurturing activities, such as breast-feeding and playing, can have a significant impact on a child's IQ. And so the old "nature vs. nurture" debate rolls on. We are challenged to strike a balance between the "just so" stories of biology and the "just so" stories of psychology and sociology (Hull, 2000).

I am convinced that this is a false dichotomy. Certainly, we cannot deny that our genes and our environment have an effect on who and what we are. Yet one vital component—freedom of choice—is conspicuously missing from many of these discussions.

Determinists set themselves firmly against a deep-seated intuition that we do, indeed, have a genuine capacity to choose. To overturn this widely held conviction would require a massive body of evidence, not to mention some very powerful and convincing arguments. Instead, we are told that the chains of cause and effect are immensely complex and, besides, we never could know **all** the events from the beginning of time. Such expansive hand waving seems to suggest that to be a determinist means nothing more than to be an agnostic in regard to the matter of choice, which is an awfully long way from proving that choice is illusory.

Why do we have such a strong intuition that choice is real? It comes, at least in part, from the people in our lives who rise above mere circumstance. These are the people of whom doctors would say, "They won't live past their tenth birthday." These are the people that police expect to be murdered, or in jail for murder, by their 25th birthday.

Popular author Bryan Appleyard writes often about his beloved niece, Fiona. Here was a woman who suffered from a particularly virulent form of muscular dystrophy and yet, who, in her brief 30 years, shamed anyone who would dare wallow in self-pity. Appleyard made the following confession:

> Whatever anguish, irritation and despair I might suffer, I knew that I was a pampered, spoiled fool in comparison to Fiona. Others felt the same. She changed lives. At her funeral I met a man who, after meeting Fiona, had decided not to kill himself following a painful divorce. I also talked to the priest about her courage—an absurdly weak word for the colossal force that kept her going—and the effect she had on people. He smiled. "So much for the vanities of wealth and power" (1999).

Nature and nurture are not enough to explain the Fionas of this world. Even if we find the "gene for" stubborn survival, we never would be able to predict the environment in which Fiona found herself. Would a thriving family life have aided the expression of those genes? What about a life of poverty and abuse? Moreover, we never would be able to predict the environment she created around herself, and the influence she had on those who came to know and love her. It seems that humans can, but need not, surrender to the "destiny" of biology and the circumstances of life.

Our discussion of choice would not be at all complete without mentioning the will of God. Although His works often are hidden from us, God acts constantly to bring about His ends. Thus, the apostle Paul could ponder whether God intended for Onesimus to flee his earthly master—in order to return as a brother in Christ (Philemon 15-16). We cannot say, specifically, how God will achieve His ultimate purpose through the circumstances of our lives, or the choices we make.

As is so frequently the case, the changes wrought by new advances in technology are **ev**olutionary, rather than **rev**olutionary. They nudge us further down the slope, rather than causing us to jump the tracks completely. This should give us some measure of comfort, knowing that we can apply familiar principles to fresh new challenges. However, scientific knowledge **is** growing, and technology **is** advancing—sometimes at breakneck speed. The combined juggernaut is in danger of threatening to overtake public discourse. Christians most definitely need to stay abreast of these developments, and to stay far above the political and legal quagmire. No matter what the courts or politicians decide, we need to search God's Word diligently for His teaching on these critically important issues.

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NOTE FROM THE EDITOR

A SAD, BUT FOND, "FAREWELL"

It was the summer of 1982. I had been invited to present a series of lectures on Christian evidences in New Zealand at six different cities over the course of a three-week period. The trip—with its excruciatingly heavy lecture and travel schedule (speak three nights, travel all the next day, speak three more nights, travel all the next day, etc.)—was one of the most physically draining of my entire professional career. But, in the end it also was one of the most beneficial turn of events in the entire history of our work at Apologetics Press. It was during that trip that I met a young, British Christian by the name of Trevor Major who was living in the city of Hamilton and attending the University of Waikato (one of two major universities at which I was speaking on the topic of origins). Trevor attended the lectures, and he and I immediately struck up a friendship. We continued to stay in touch over the next few years. Eventually, he graduated with both his B.Sc. and M.Sc. degrees in geology.

In April 1986, at my invitation Trevor and his new wife, Chris (a native of New Zealand), moved to the United States to join us in the work here. Since that time, he has served faithfully in a number of capacities, including Director of Scientific Information (a post he held for more than fourteen years) and editor of *Discovery*, our monthly magazine on Scripture and science for children (a position he has held for the last four years).

But, as the old adage suggests, nothing lasts forever. Some time back, Trevor informed me that he had a burning desire to go back to graduate school in order to work on a Ph.D. in philosophy of science. Ultimately, he applied to several schools, and not long ago learned that he had been accepted into the graduate program at Ohio State University. After discussing the matter with his family (he and Chris have two sons, Michael, 10, and Nicholas, 8), he decided to accept Ohio State's offer. And so, as of October 1—after more than fourteen years of faithful service at Apologetics Press—Trevor resigned his position with us and moved his family to Columbus, Ohio to begin his graduate work.

It goes without saying, of course, that we shall miss him terribly. Trevor truly is one of the smartest young men I know. He is a marvelously gifted writer, and an extremely effective teacher. His efforts on behalf of both *Reason & Revelation* (for which he served as associate editor) and *Discovery* have been both tireless and appreciated. His commitment to Truth, and to its dissemination in the most accurate manner possible via the pages of *Reason & Revelation*, have endeared him to our readers for almost fifteen years. His love of children, and his desire to teach them the Truth using the finest quality writings and illustrations through the pages of *Discovery*, have endeared him to thousands of youngsters over the past decade. In addition, during his tenure with us Trevor not only produced hundreds of articles, but also wrote a book—*Genesis and the Origin of Coal and Oil* (published by Apologetics Press)—that has been recommended and distributed widely by creationists around the globe.

Trevor has estimated that it should take him approximately five years to complete his doctoral program. Fortunately, he has agreed to continue to write for *R&R* (as his class schedule allows) during that period. I therefore am hopeful that we will be running additional articles from his powerful pen in the not-too-distant future. Prior to his departure, in fact, he authored the two-part series (surveying the intelligent design movement) that began last month and concludes with this issue.

The day he moved, Trevor handed me a nice letter in which he wished us well as the "new era" began at Apologetics Press in his absence. My staff and I would like to reciprocate, and wish him every success in his "new era." As our long-time friend and coworker departs, we bid him a sad, but fond, "farewell."

Bert Thompson

[In my "Note from the Editor" in the January and February 2001 issues, I will be introducing two extremely talented young men who are joining us in our work. Watch for that announcement.]