



## April 2 Meeting - Massimo Pigliucci

### Science and Religion: Should the Relationship Warm Up?

Science and religion have been at odds since the beginning of modern science itself, in the XVI century. Lately, however, calls have been made from several parties for a re-unification, or at least a constructive truce. Is the relationship between science and religion warming up? Should it be? Michael Shermer, author and publisher of *Skeptic* magazine has proposed three "models" to understand the possible relationships between science and religion. I will illustrate the idea briefly, and then turn to specific claims within each of these ways of thinking. I will conclude by suggesting that perhaps the most fundamental conflict between science and religion has been articulated by one of the best and most beloved scientists of the 20th century, physicist Richard Feynman (in "The Meaning of It All"). Feynman simply started by asking why it is that so many people who learn a lot about science tend to disbelieve in god, even when they started out as believers. As we have seen, there is plenty of empirical evidence backing this claim. Unlike the sophistry that permeates Stephen Gould's writings, Feynman's answer is straightforward and honest: science teaches you to doubt and to look for evidence; religion stands for the exactly opposite intellectual attitude. It doesn't really matter to which field of inquiry the scientific or religionist attitude is applied, they are at odds, and therefore they generate conflicts.



Massimo Pigliucci is Associate Professor in the Departments of Botany and of Ecology and Evolutionary Biology at the University of Tennessee in Knoxville. He has a Doctorate in genetics from the University of Ferrara (Italy), and a Ph.D. in botany from the University of Connecticut. He has been a post-doctoral associate at Brown University. His academic research focuses on the ecology and evolution of genotype-environment interactions, that is on the old nature vs. nurture problem. He has published 49 technical papers in evolutionary biology. He has written two popular science books in Italian. Sinauer published in 1998 his technical book *Phenotypic Evolution: a Reaction Norm Perspective* (co-authored with Carl Schlichting), and he has just finished preparing *Phenotypic Plasticity: Beyond Nature vs. Nurture* for Johns Hopkins University Press. He has been awarded the prestigious "Dobzhansky Prize" by the Society for the Study of Evolution and has been selected as teacher of the year by the University of Tennessee Mortar Board Faculty Appreciation committee. As a skeptic, he has debated creationist Duane Gish and Christian theologian William Craig, has given talks to various skeptic and humanist groups throughout the US, and has published in *Skeptic* and *Skeptical Inquirer*. He is editor of the on-line skeptical magazine *Reality Check* (<http://fp.bio.utk.edu/reality>), maintains a skeptic/humanist web page (<http://fp.bio.utk.edu/skeptic>), and can be reached via email at [pigliucci@utk.edu](mailto:pigliucci@utk.edu).

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### Events

**March Meeting  
delayed until April 2**  
Massimo Pigliucci  
*Science and Religion: Should the Relationship Warm Up*  
Sunday, April 2 at 7:00 PM  
Geier Center

**Potluck Dinner**  
Tuesday, April 11, 2000

## TERRY GROSS

A Big thanks to Helen Kagin for organizing FIG's participation in the Woman's City Club's Terry Gross lecture on March 6. FIG was among 20 progressive organizations co-sponsoring the event. Thanks also to Michele Grinoch for coordination dinner beforehand at Mullane's - great fun! Terry Gross gave a most interesting perspective on her interviewing experiences over 25 years at NPR. Eight of us attended the reception after her talk. David Scheidt took the opportunity to ask Terry Gross about her religious background: she is Jewish, and non-religious, although she has great interest in how spirituality motivates individuals in their lives. In true form, Terry then questioned David on his religious background, listening with intensity (proving she loves her work!) David shared his humanist beliefs, and we explained that FIG was a co-sponsor of her talk. As a devoted fan of Terry Gross, the event was a true highlight for me.

Alice Alexander

## Terry Gross

The most often asked question about Terry Gross is "What does she look like?" There is a mystique to someone who builds their career in radio. And the answer is...she is tiny, less than 5 feet tall. But size has nothing to do with her intelligence, dedication, and ability to ask insightful and unusual questions.

Ms. Gross' presentation to the Woman's Club focused on her interviews that turned out to be less than perfect. She said that when an interview goes well, it paints a portrait of the person. A 30 second sound bite would not have given us much of an appreciation for the whole picture. But with great humor, she shared with us several times when things just didn't develop as she would have liked.

Having completed over 10,000 interviews, it's not surprising that some of Ms. Gross' probing questions strike some unexpected nerves. And since the majority of the people she interviews are in a distant radio studio rather than in the same room, she does not have the ability to chase a reluctant participant down the hall. She begins each interview with the assurance that if a question seems too personal and makes the person uncomfortable, she will gladly agree not to continue on that subject. She also offers to allow most people to have a second chance to phrase their answer if they feel that they are not getting their point across. "Most people", however, does not include politicians, whom she sees as professional public relations experts who might take advantage of the situation to manipulate the public.

Ms. Gross considers herself to be a good interviewer and a bad friend. She spends practically every waking moment doing research for her interviews: reading, listening to music, researching, viewing movies. That does not leave much time for socializing.

Interviewing is about trust. It's almost too easy for some people to reveal personal aspects about their lives in the privacy of the studio. The interview process can be a struggle with the person being interviewed who wants to sell a book, record, or movie, or publicize their political agenda. Ms. Gross wants to find out "what makes that person tick." She wants to find out a little about what feeds their creative genius, motivates them to succeed, sustains them, helps them deal with failure, etc. She finds that through their honesty, she is able to "clarify her life". She considers it to be their gift to her.

Martha Ferguson

The Science Book Club meets the 4th Sunday of each month in the main library downtown from 2:30 to 5:00. (Note the increased duration.) The 2 March meeting will discuss Feynman's *QED The Strange Theory of Light and Matter*. This book is reviewed on page

### Letters to the Editor

We have a new e-mail address:  
FIGEditors@aol.com

The mail address remains:  
Editor, FIG Leaves, P.O. Box 8128,  
Cincinnati, OH 45208

FIG Leaves Volume 9, Issue 3, March 2000 - Editors welcome thoughtful articles, letters, reviews, reports, anecdotes, and cartoons. Submit in electronic format via Internet to FIGEditors@aol.com or on disk or typewritten via mail to Editor, FIG Leaves, P.O. Box 8128, Cincinnati OH 45208. Contributions received before the first Tuesday of the month will be considered for publication that month. All material printed in FIG Leaves may be reproduced in similar publications of non-profit groups which grant FIG Leaves reciprocal reprinting rights as long as proper credit is clearly attributed to FIG Leaves and the author. Opinions expressed in FIG Leaves are those of their authors and do not necessarily reflect opinions of the editor or the Free Inquiry Group, Inc., its board, or officers. © 1999 The Free Inquiry Group, Inc. FIG Board of Directors: President George Maurer, Vice President Edwin Kagin, Secretary Helen Kagin, Treasurer Joe Levee, Members: Nurit Bowman, Lyse Hurd, Tim Kelly, Inez Klein, Robert Riehemann, Gary



# February Speaker Review - Margaret Downey

Margaret Downey is a woman with a mission: she wants to save our society from the TAR pits. Growing up near the George C. Page Museum of La Brea, California, she became fascinated with the ancient animals' struggles to escape the tar pits and wondered how she would have fared in such a struggle. Later she came to see that all of society is in a similar struggle with a different kind of TAR: Tradition, Authority, and Revelation. They have much the same effect as the other kind of tar, eventually smothering their victim. She sees critical thinking as the only mode of escape for all of us.

Ms. Downey points out that traditions are so embedded in society that their original purpose is frequently lost to us. Much of the time we blindly follow along with tradition without giving thought to their origins. From the seemingly harmless traditions of the marriage ceremony (the bride's veil, the bridesmaids and groomsmen) to the more manipulative traditions of religion, they all encourage us to fall into line with society's expectations without clearly thinking things through.

Ms. Downey supports same sex marriage. She believes that marriage represents a way in which the government unnecessarily intrudes into our private lives. She encourages women to keep their maiden names rather than risk losing their identities. And she strongly encourages parents to plan ahead to avoid perpetuating the widely accepted myths of society: Santa Claus, the Tooth Fairy, the Easter Bunny, etc. She may not have been the most popular mother in her neighborhood, but she was very proud of never having lied her children. She never needed to convince them to trust her, because trust was the very foundation of her relationship with her children.

Baptism was singled out as the very act of dipping a child into the TAR pit of society. She finds it especially unsettling that a 2 week old baby is placed through this ceremony when there is obviously no freedom to choose on his/her part. One highlight of the evening was an un-baptism ceremony for anyone who wished to make his/her previous experience null and void. In the tradition of the "Association to Delete Baptism" formed in Rome, Italy, Ms. Downey requested that her own name be stricken from the Catholic Church Records. Those who chose to participate were given a certificate after they answered affirmatively to the following declarations:

- ?? Do you recognize that rationality and strength of human reason is humanity's best hope for solving problems and providing the possibility of a peaceful future?
- ?? Do you accept the universe as a fully natural and recognize it supplies no evidence of a supernatural being or deity?
- ?? Do you deny the inherent sinful nature of mankind and the personification of evil in the form of a devil or other

being?

Critical thinking is the **ROPE** with which Ms. Downey believes that you can rescue your child from the TAR pits. **Reason, Objectivity, Principles, and Evidence** form the ROPE. Objectivity prevents children from believing that a single right answer exists to every single question. They should not limit their knowledge by anyone's restrictions. She finds the much touted 10 Commandments especially wanting as Principles with which children can face life's choices. And she thinks that if children ask questions, demand proof, and pursue answers, they will find Evidence to support their beliefs. This is in stark contrast to religious parents that can only advise their children to "have faith".

Ms. Downey points out that teaching your children to think critically is "**2 E Z**". You must set an **Example**, thus tying the ROPE around yourself before throwing it to your child. Your child not only needs the **Education** that schools can provide but also "enriching life experiences." And parents and children must have a **Zest** for life, because this is our one and only opportunity to live.

Ms. Downey showed an episode of "The Dinosaurs" called "The Greatest Story Ever Told". It told the story of a primitive dinosaur society of Pangia that was paralyzed with worry about how and why they came to exist. The Council called a meeting to assign blame to the child who originated all the questioning about their existence. Rather than discussing the problem and seeking an honest answer, they called in the experts and chose the explanation that the most "thick skulled simpleton" was willing to accept: they originated from the "giant magic flying potato". Soon "The Great Book of Potato" was written, holding all the answers to all of their questions, and life had meaning again. Potatoism permeated all facets of their lives, including the science class and especially the government. Soon anyone who refused to follow potatoism was ostracized and even sentenced to be burned at the stake. When rain suddenly spoiled their planned execution, they were forced to reconsider their reliance upon easy answers to difficult questions. The show ended in the beginnings of a free discussion of possible explanations to the dinosaur's existence.

Appropriate door prizes were handed out for those who shared their family's experiences avoiding the TAR pits. Ms. Downey warned that ceremonial deism is the most dangerous prejudice that we face. The Pledge of Allegiance and the addition of "In God We Trust" to our currency encourage our children to think that everyone believes in God, and those who choose not to must somehow be found wanting. After a break, there was a brief question and answer period. The discussion turned to funerals and legacies. People often ask Ms. Downey if she doesn't fear death without hope of an afterlife. She views her deeds now as building an afterlife for herself. She lives by her conscience rather than choosing the easy path. She



# Kagin's Column



On Friday afternoon, on schedule, I underwent the near death like procedure that consumed 3 ½ hours from cut to close. I have no memory whatsoever of anything that I don't remember.

I do remember seeing some eight to ten quite serious looking people in the operating room. Many were friends of my Helen, who served there (The Christ Hospital) as an anesthesiologist for some 30 years, before retiring to be registrar of Camp Quest and to do lethal injections as an income supplement. I have a T-shirt that says, "Sleep Better With An Anesthesiologist." Dr. Rich Stiliz, anesthesiologist, and nurse anesthetist Patty Hornak, whom I have known for better than 15 years, were in charge of the lethal injection part.

They also know me, so it came as no surprise to them when, upon seeing T.V. monitors in the O.R. ("Operating Room" for those who don't do television) I asked if it would be possible to have a video made of the procedure. Well, it was, and was, and you can now get your very own copy of "Cutting Edwin's Throat: The Video" for a modest contribution to Camp Quest. This Edwinian request did come as a surprise to the very nice young Dutch doctor doing a Fellowship at The Christ Hospital in Neurosurgery. His name is Dr. Rashid Janjua, and he is a Muslim. It is a long story. Anyway, I was reminded later he had politely and innocently introduced himself to me in the O.R., told me he would be assisting my surgeon, Dr. William Tobler, and asked me what I did for a living. I told him I sued neurosurgeons and anesthesiologists.

Rashid became my primary informant thereafter for what happened. He even checked out my web site, and asked my Helen that most commonly asked Helen question, "How do you put up with him?" He speaks very good English, is 30, unmarried, and his e-mail is available upon request. He was unaware until later that when Nurse Hornak spoke unto me the first angel-like first words in the recovery room to advise that I had in fact lived, I asked her if Akhenaten was still pharaoh. But Patty is used to it. She has been reading "Kagin's Column" for years.

I learned that Dr. Janjua carved from the outside right of my throat until he got to the narrow lifeline that had to be worked around with much skill if I hoped to walk or speak again, or even to make morning roll call. Here the more experienced Dr. Tobler took over and, using microscopic surgery, cut away the body of the 4th cervical vertebra, and removed the discs above and below the bad

vertebra. He next sawed living bone from the right iliac crest of my pelvic bone, from which he fashioned a new C-4, and then snapped it into place.

Next, a titanium plate was installed in me with four screws that expanded into C-3 & C-5 to create a bionic and bony bond for C-4. The manufactured plate and the new osseous artifact are now a part of me until death do me part. This plate alone will cost the insurance company some \$2000. So I guess I will never be broke. This plate is about 3mm. thick and goes in from the front. I have confirmed that, after my body is one day cremated (hopefully being dead first, rather than being mined by fortune hunters), this plate will survive and remain, perhaps to be made into an amulet for one of my children to wear, labeled "Dad." I have seen this plate installed in my body on X-Ray, and it is quite attractive. How it will react in high magnetic fields is not fully known. For all I know, under the right conditions, it will pick up NPR.

Thinking about that plate, the general theory could be quite useful for a more permanent dog tag for soldiers, baring important engraved information. The benefits for identifying random remains seem obvious, but this may be an idea presented before its time. Leathernecks could be known as.... You get the idea. Remember, you heard it here first.

So, as you have doubtless gathered from the foregoing, I am at home, in good shape, and at computer. I am quite relieved the whole thing is over, and the pain has been dramatically less from the moment I returned to life in the presence of the angels of the recovery room. I am healing quite rapidly, a fact that can no doubt be attributed to my being a superb human physical specimen and to the (so far as I know) absence of prayer. The fact that my doctors were as good as they come had quite a bit to do with it as well. The religious significance of a Dutch Muslim on my surgical team is important in exact proportion to his obvious surgical skills.

From the moment the anesthetic was injected, until I woke up some 3 ½ hours later, there was no sense of growing tired, of drifting off to sleep, of seeing tunnels of light, or indeed of anything whatsoever. I experienced an instantaneous, seamless transition from being in the Operating Room to being in the Recovery Room. The only thing "faith" had to do with it was the confidence I had in those who gave me the anesthesia, confidence that my surgeons could do an operation that would have been impossible during the crusades or the inquisition, confidence in my own physical condition, and confidence that I had made a rational decision by my acceptance, based on all evidence known to me, of the high likelihood that this would work. Frankly, it worked better than I hoped. It might not have. It was worth the risk.

If the procedure had been done at a time in our history when some medicine man might have stuck bones in the eye sockets of a cave bear and a knife in my neck to cut out the evil spirit he thought was causing the pain, all

*(Continued on page 5)*

Edwin Kagin "The Inquisition in Kentucky" April 2, 2000 1:00 Unitarian Fellowship St. Paul's U.C.C. Church #1 Churchill behind Graeter's off of Grand Avenue Fort Thomas, Kentucky
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# FIG Leaflets

So, the Kentucky Chapter of the Movement for the Restoration of the Ten Commandments, previously known as the General Assembly, now wants its own little Tower of Babel a graven image, if you will on the state Capitol grounds?

May we suggest that the sight of state lawmakers in sackcloth and ashes, begging forgiveness from their God and constituents for their shameless exploitation of religion, would go a lot further toward curing the ills of this society than some 7-foot monument to the Ten Commandments?

Tuesday, March 21, 2000, in the *Herald-Leader*  
<http://www.kentuckyconnect.com/heraldleader/news/032100/editorialdocs/321commandments->

Although Europeans are losing their religion, Americans are holding on to their spiritual beliefs. A recent Gallup poll found that 95 percent of all Americans say they believe in God, compared with 35 percent of the population in England, and lower numbers in other European countries.

**William McCall**  
**Scholars To Explore Images of God (AP)**

*(Continued from page 4)*

the while chanting nonsense to the believing sheep, I probably would not now be sending you this sequel, and my failure to survive would have been ascribed to a lack of faith. "What did you think would happen? Didn't he write all those "Kagin's Columns?" Even if I had, by virtue of random chance operating in my favor, lived, you can bet I would not be telling you of it on a miracle of electronics that will put these words on your computer screens before you can look up the Ten Commandments in a Kentucky legislative bill. This miracle on which I write was invented by human minds. It was not in use on the Ark. Imagine if Moses could have had a laptop, with Internet access.

The fact that I went into the death like state on Friday afternoon, and arose from my bed and came unto my home early on the first day of the week is a fact that seems oddly familiar from somewhere.

Thank you for your many good wishes. I also thank the doctors and the staff who fixed me up and prevented my death or paralysis. I will try to reward you with humorous things.

**Edwin Kagin**

## Kentucky Civil Rights Legislation HB 70

"It's OK to discriminate against those who don't believe in God," Kagin said. "Next it will be gays. Do they think they'll be overwhelmed with atheist groups?"

Although he didn't say it was an underlying motive for HB 70, Lipscomb admitted that as a Baptist he wasn't open to the idea of renting to gay, lesbian or bisexual groups, nor did he believe that many Northern Kentucky Baptist churches would be either.

From *Rights and Wrong*, *City Beat* 2/1/00

by Darlene d'agostino

<http://www.citybeat.com/issue/newsarticle1.html>

Opposed by the Kentucky Council of Churches, the bill is an embarrassment to those who believe that religious faith implies an openness, if not an outreach, to others. And it runs counter to the image and future most Kentuckians want for this state.

Governor, put HB 70 out of its misery and save the state from legislative shortsightedness and cowardice.

*Lexington Herald-Leader* Friday, February 25, 2000

<http://www.kentuckyconnect.com/heraldleader/>

The classically minded amongst us may have noticed a new ad for Microsoft's Internet explorer e-mail program which uses the musical theme of the "Confutatis Maledictus" from Mozart's Requiem.

"Where do you want to go today?" is the cheery line on the screen, while the chorus sings "Confutatis maledictis, flammis acribus addictis"

Translated (not by me) "the damned and accursed are convicted to the flames of hell "

Good to know that Microsoft has done it's research.

From: "Colin Farr" <[crrfarr@bcpl.net](mailto:crrfarr@bcpl.net)>

## World Wide Web

"TAAC" -- Teen Atheist & Agnostic Chat --  
<http://hometown.aol.com/frthvc/TAAC.html>

10 Commandment Legislation:

<http://www.atheists.org/flash.line/tenco11.htm>

<http://www.atheists.org/flash.line/tenco7.htm>

<http://www.atheists.org/church/tencommandments.html>

<http://www.americanatheist.org/supplement/tencomm.html>

Flat Earth Society:

<http://www.talkorigins.org/faqs/flatearth.html>

Colombine Shooting information update:

<http://www.atheists.org/flash.line/colindex.htm>

<http://www.atheists.org/flash.line/colo10.htm>

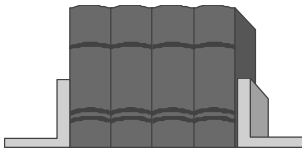
Economic Sanctions on Iraq:

[www.afsc.org/news/2000/nrriirsgn.htm](http://www.afsc.org/news/2000/nrriirsgn.htm)

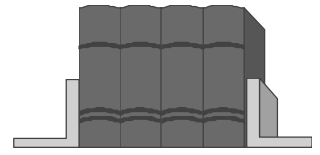
**March 2000**



**5 FIG Leaves**



# Book Reviews



## **Marking Time: The Epic Quest to Invent the Perfect Calendar**

by Duncan Steel  
(New York: John Wiley & Sons, 2000)

*Marking Time* is a fairly technical book by a professional astronomer laying out the whys, hows, and the history of the calendar. The story runs from Stonehenge and Sumer to the year 2000 AD or CE or 1420 AH or 5760 since the Hebrew Scriptures "beginning" or whatever way of marking time you might prefer. Steel discusses not only the evolution of our present Gregorian calendar, but sidetracks into Jewish, Coptic, Islamic and many other calendric systems past or present. Just about anything I can think of on the subject is treated here. Steel calls it "a popular account" but sometimes the math gets dense, so I rather skipped than wrestled with it. Let me add that it is a good book, a thorough book, and a readable book.

The fundamental problem of calendar making is relatively simple to explain. The earth revolution (year) is not divisible by the 365.24219 rotations (days). Neither is the year commensurable with the lunar cycle (month) of 29.5306 days. That's a mean, the length varies. In addition, the length of the day differs by about half an hour depending on the time of the year, i.e the position of the earth in its orbit. Any calendar year is a compromise to (1) keep a full number of days in any given year, and (2) keep the seasons at the same time in the calendar. Other questions turn on when to begin a new year, and from what time to count the number of years.

I tend to think of astronomy and calendar calculations as essentially scientific and mathematical. So it was astonishing to learn the extent to which religion and religious considerations played a major role in the history of the calendar. The Church just couldn't allow a moveable feast like Easter gradually to slide into the fixed date of Christmas. One reason why Easter was fixed on a full moon Sunday, was so pilgrims to Bethlehem could find their trail at night. On the other hand, Easter was fixed on the Vernal Equinox in such a way as to never (or rarely) fall on the same weekend as Passover. This despite the fact Jesus was supposedly executed on that feast. Even then, neither the full moon nor the Vernal Equinox is quite the same as the astronomical features by that name. Steel explains them as *ecclesiastical* moon and equinox (p. 93). They are not easily defined, nor do the definitions agree among all churches.

Every religion seems to count the years according to its own founder. Since, however, few thought of keeping

accurate count or knew they were at the beginning at the time, the date had to be estimated in retrospective. The year of Christ's birth was finally calculated by Dionysius Exiguus in the first half of the sixth century. He is thought to have got the calculations wrong, from whence we have all sorts of happy controversies over which year is the real year of Jesus' birth.

There is of course no way one religion would accept the calendar and calculations of a rival. When Pope Gregory XIII had the calendar revised and dropped ten days in 1582, none of the Protestant churches would go along. As a consequence, Washington was born on 11 February 1731/32 which became the 22nd of that month when the British and their colonies accepted the "new" calendar in 1751. And, the great October Revolution became dated to 11 November after the Soviet Union accepted the Gregorian Calendar. The Orthodox Church, however, still goes by the earlier, Julian Calendar.

Steel tells all this and much more with wit, ease, and clarity. He also calculates, with tongue firmly in cheek, the birth and death day of Jesus. He was born on 15 April in 5 BCE, and expired in the afternoon of 3 April 33 a few days before his 37th birthday.

**Wolf Roder**

## **Don't Know Much About the Bible: Everything You Need to Know About the Good Book but Never Learned**

by Kenneth C. Davis  
(New York: Wm. Morrow & Co. 1998)

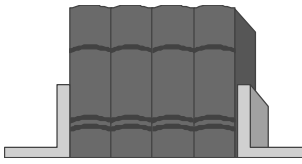
Another extensive explanation for those who "don't know much about" by the author who explained history, geography, and the Civil War. Davis tells us he was raised a traditional Protestant "with a full menu of Christmas pageants and confirmation classes," (p. xvii). He attended an unspecified Lutheran college and Jesuit Fordham University. There he studied the history and literature of the Bible, yet when he really expected to know something on the subject he found himself at a loss. Only when he began researching for this book did he find the Exodus story of the Red Sea was a garbled mistranslation of Sea of Reeds; the prophecy of birth by a virgin was a Greek ambiguity referring to a young woman, and that even the name of Jesus "is a muddled translation of the Hebrew name Joshua." (p. xviii).

Davis writes from the standpoint of modern Bible scholarship and research in ancient history and archaeology. His bibliography is replete with accepted authorities, not with fundamentalist nonsense. He makes it

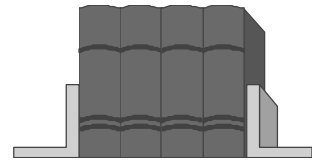
*(Continued on page 7)*







# Book Reviews



(Continued from page 6)

clear that he admires the Book, and that he remains Christian, albeit a Christian who appreciates the Bible was written by human beings.

The layout of the book is fairly straight forward. He starts at the beginning and carries us through to Revelation, following the Protestant order of the individual books. For each book he recounts the story line, quotes a key passage here and there, and most of all explains what modern scholarship has found out and written about the book. He provides a historical time line as far as it is known, and sketches the background of key personalities. Unfortunately, there is only one inadequate map to show where these things go on.

Davis does not pull punches in his narrative. He writes of God's violence, of ethnic cleansing and genocide, of murder and mayhem, of prostitutes and loose women. He points to the gradual change of the eternal God, from a vicious tribal deity to a more beneficent being who intervenes in the life of His people. He is clear the narrative of the kingdom of Israel period is fairly secular, although only two books in the Bible do not mention God at all. He introduces the Apocryphal books which remain part of the Roman Catholic canon.

In the New Testament Davis makes us aware of the many gaps in the record, and the contradictions between the Gospels. His table of the Miracles of Jesus, showing in which of the four Gospels each appears is quite useful. (pp. 397-400). Following Biblical scholarship Davis delves briefly into the non-Biblical Gnostic Gospels to make us aware of how different their view of Jesus is.

The book is quite well written, I surely like it better than the similar comments on the Bible by Isaac Asimov. Davis admits that one might well dismiss "the various images of God as an elaborate set of Myths." (p. 469). These are stories men invent to explain what they can not understand; childish things to be put away when science finds more accurate explanations. After all, which God should one believe? There is the brutal, punishing God of Moses, the merciful, forgiving God of the Kingdom period, the tender shepherd of the Psalms, or the perfect father of Jesus.

At the end Davis opts for the moral law the Bible teaches us. He points out the Jews have been sustained by these ethical ideas for thousands of years. And, faith in justice and mercy has helped Christians through adversity and oppression. The question going begging remains, which good and just and acceptable moral law? Which Law of the Bible, and whose Bible?

**Wolf Roder**

## ***Chance and Necessity*** ***An Essay on the Natural Philosophy*** ***of Modern Biology***

by Jacques Monod  
(Alfred A. Knopf, 1971, 199 pages)

Several Nobel Prizes have been given for the clarification of genetic mechanisms and the elaboration of related cellular chemistry, beginning with Crick and Watson's work on the structure of DNA. Monod is a member of this distinguished group. He later became director of the Pasteur Institute in Paris. This text presents his philosophical thoughts on the consequences of the success of molecular biology: the physical reductionist program to explain biology in terms of physical laws.

Monod begins this book with philosophical problems and proposes solutions inspired by this work. For Monod, the main problem in a reductionist explanation of human behavior is purpose, otherwise called goal seeking (or teleonomy to the severely over-educated). The short answer is that he believes the key lies in properties related to the geometrical shape of protein molecules, which chemists call stereochemistry. At one point Monod describes humans as chemical machines. His main goal in the middle chapters is to suggest the engineering principles supporting this idea which can be derived from the scientific knowledge (in 1971) obtained by molecular biologists.

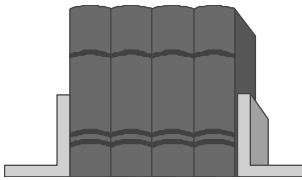
The cellular mechanisms by which organisms survive are broadly broken into two groups. Those concerned with reproduction and those concerned with behavior. Nucleic acids---DNA, RNA, mRNA, tRNA etc., are responsible for the reproductive portion and the creation of the proteins which account for behavior. DNA accounts for the invariance of reproduction---the ability of an organism to preserve its organizational scheme over successive generations. But proteins account for the moment to moment behavior of the cell, and hence of the organism (i.e. of you).

The proteins are then described and it is emphasized that:

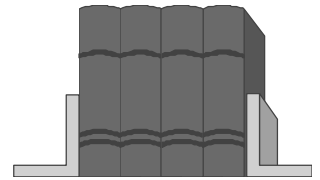
- 1) protein (in particular, enzyme) action is extremely specific, generally affecting only one reaction in the cell's metabolism. This is due to the geometrical structure of proteins.
- 2) there are chemical mechanisms to regulate or control sequences of chemical reactions in the cell. Several are explained. This is the work for which Monod won the Nobel Prize.
- 3) The controlling enzymes (allosteric enzymes) are

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# Book Reviews



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chemically independent of the reactions they control. This has the important consequence that there is much freedom in the construction of these controlling agents. In an engineering sense, this means that there is a wide variety of ways to modify the behavior of a reaction. It also makes it possible to change behavior through evolution. However, it should be noted that Monod also discusses the evolution of ideas---now called meme theory.

- 4) The net consequence of the above is that there is a way to view cells as containing cybernetic machinery. That is, there are sets of chemical which control the rate and even the occurrence of chemical reactions in a cell.

Now consider yourself. What happens inside your body when you get up to look out the window because this article is boring? For your body to move, your muscles must move. But your muscles are made of cells and their movement is just a mass change in their behavior. This means that the internal chemistry inside the muscle cells must change its function slightly. All of this is controlled by other chemicals inside the cells. Those cells received stimulation from other cells and chemicals passed into them from various sources. This in turn was set about much further back by changes in the functioning (not the mechanisms, but the relative rates) of reactions in your brain cells. These changes were stimulated by changes in your retina caused by light reflecting from the page. And so it goes.

Monod's point is only that these things are possible because we have the necessary parts, which he describes. He does not claim to have given the explanation but only to have suggested a plausible mechanism. Since we know that machines can be constructed which seek goals using cybernetic (now called computer) principles, it is clear that, in principle, the purposive behavior of organisms can be explained.

What then are the conclusions which Monod derives? Noting the incompatibility of his point of view with traditional religion, he searches for an ethical principle and decides to fundamentally value knowledge. This valuation is an ethical choice and entails an adherence to a principle of objectivity. Ultimately, he sees this as supportive of a "scientific socialist humanism." It is of course, atheistic.

I'll bet that you didn't know that all of this was just below the surface of your chemistry and biology books when you were in school.

**Bob Riehemann**

*The Strange Theory of Light and Matter*

by Richard P. Feynman  
(Princeton University Press, 1985, 158 pages)

This is my favorite popularization of physics. It explains, without using mathematics, how physicists reduce complicated phenomena to simpler things. The explanation uses some pictorial techniques to show how the mathematics is done. It is the most honest popularization of physics I know. It describes the theory of quantum electrodynamics (QED).

QED is the theory of photons and electrons. Most people know that light comes in particles called photons, but most do not know that electrical interactions (attraction and repulsion) are mediated (caused) by the exchange of photons between charged particles. Feynman uses a simple example, the partial reflection of light by glass, to introduce the theory in the first chapter. He explains the principles of quantum mechanics from the point of view of particle physics, making a simple model of the interaction of light with glass. Later chapters refine and clarify the theory until the phenomena can be understood in terms of the atoms in the glass. By the end of the third chapter he has explained why light "goes slower" through glass than air. (It doesn't, it only appears to move slower.) He also explains that there is some probability that a photon travels faster or slower than  $c$ , the "speed" of light, and that quantum objects have a probability for traveling backward in time. It is this strangeness of nature which Feynman most enjoys. But while nature behaves strangely, there is a simplicity about it which brings delight.

Feynman remarks that QED's accuracy is comparable to measuring a distance between two objects, one in San Francisco and the other in Washington, DC, to within the thickness of a human hair. He also remarks that QED, this fabulously accurate theory, explains all of chemistry and mechanics. Consequently biology is explained because all biological phenomena are chemical phenomena. QED does not describe nuclear decay, gravitation, and the interactions at high energies which describe the internal workings of protons and neutrons, but these are unimportant for biology. Feynman does not say it, but the accuracy of QED is the strongest evidence that human beings are "machines" because everything which a human being does is done by atoms and the behavior of atoms is explained by QED to a fantastic accuracy. Feynman draws this conclusion in other books, notably his Lectures on Physics given to students at the California Institute of Technology.

The last chapter discusses the problems of QED: a qualitative discussion of the complicated procedure to get realistic answers out of the theory. This is the work for

(Continued on page 9)





## THE STATE OF KENTUCKY'S LAWS IN THE YEAR OF OUR LORD 2000

Kentucky lawmakers have turned a mineral  
Into Kentucky's own official state rock  
And they've made a rock our official mineral  
And offered even more nonsense to mock

They want schools to teach the history of religion  
And compare religions in tales and in song  
So long as teachers made it very clear  
That every religion but one is wrong

Female public nipples are to be covered  
But a newly sought law will impale you  
If you are a man who is seen out in public  
While concealing discernibly turgid genitalia

Proffered law will let schools teach evolution  
So long as teachers do not postulate  
That humans came from something not living  
Or evolved from animals into human state

Laws are sought to protect the civil rights  
Of those who would have us publicly pray  
And would let church and state discriminate  
Against the godless and the gay

It's desired we protect as fully human  
Every fertilized egg and every fetus  
Perhaps we need laws protecting humankind  
To ban coitus incompletus

So see wisdom perish in Kentucky  
Watch the retreat of common sense with awe  
As these fools and their proposals  
Create self-righteous stupid law

Edwin F. Kagin  
February, 2000

*(Continued from page 8)*

which Feynman got his Nobel Prize. He then discusses quarks as a similar theory to QED and discusses the prediction of the top quark. The top quark was discovered a few years ago.

As a way to understand the particle physicist's view of the world, I can recommend no better text.

**Bob Riehemann**

## What is Truth? Part II

On Wednesday, March 15th, more than a dozen free-thinkers gathered at the Addis Zemin restaurant for the second half of a discussion on the meaning of truth. Several articles on the subject of Post-Modernism were used to spark the conversation. Everyone enjoyed the unique Ethiopian cuisine while William Jensen moderated the discussion and kept it moving forward.

The group did their best to articulate the principles of Post-Modernism, but this was difficult since no one in attendance ascribed to the philosophy. The group found merit in the proposal that absolute truth may be unattainable in areas such as morality, but they were less willing to concede the same for the hard sciences. Gary Weiss provided the mathematician's viewpoint of starting with certain knowledge and then pushing beyond that to find new truths. Only after the new truths are thoroughly tested by other experts can they be accepted back into the 'known' world.

There was some discussion of the historical roots of Post-Modernism and its expression in the disaffected youth of today. There was acknowledgement of cultural bias in the definition of truth, but no one defended the position that all viewpoints are equally valid. The group also discussed the problem of accepting a philosophy that basically rejects the concept of truth. In the end, it seemed that Post-Modernism did not hold much appeal for rationalists.

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Atheist: A person who does not believe in the existence of a Deity. Many people, both ancient and modern, have pretended to atheism, or have been reckoned atheists by the world; but it is justly questioned whether man seriously adopted such a principle. Those pretensions, therefore, must be founded on pride or affectation.

**1771 edition of the *Encyclopaedia Britannica***

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As recently as 1972, it was illegal in twenty-six states for anyone to provide birth control information or devices. That's how new your free access to birth control really is. On 22 March 1972 the U.S. Supreme Court decision Baird v. Eisenstadt guaranteed the right to privacy, particularly in matters relating to birth control and sexuality. Bill Baird, a lifelong humanist fought and won the case. If there is to be a humanist holiday, we all need to do our part by contacting our state governors, senators and representatives, and the president of the United States. Urge them to join the effort to celebrate the Baird decision and the public's right to privacy. In light to the increasing threats to our privacy there is no better time than now to recognize the significant human rights milestone the anniversary represents. For more information about this momentous decision see: <http://www.plannedparenthood.org/about/narrhistory/court-3.html>

**March 2000**



**9 FIG Leaves**