N. 1, August 2000
The rationalistic fallacy

If you are of the lot who is stubbornly trying to improve critical thinking skills around the world and feels a bit frustrated by the wave of nonsense that regularly hits the airwaves, you are not alone. If you insist in thinking that all you need to do is to explain things just a little bit better and people will see the light, you are committing what is known as the "rationalistic fallacy."

It is probably true that better knowledge and understanding of science improves one's ability to grasp the real world; if that were not the case the entire education system should be thrown out, a step that only a minority of right wingers is prepared to take in the US at this moment. But it is also undeniably true that explaining science to many people does not make them any less true believers in pseudoscience.

For example, John Moore reports in an article in The Science Teacher (May 2000) that subjects were surveyed for their beliefs in the paranormal, UFOs and astrology before taking a course which dissected the evidential bases for all these pseudosciences. While skepticism had marginally increased toward the end of the course, credulity had returned with a vengeance only a year after the test!

It seems to me that we should try to understand what causes the rationalistic fallacy if we hope to make any progress in fighting the rampant irrationalism that manifests itself in countless forms. It might save us a lot of misdirected efforts and a trip or two to the psychotherapist when the depression hits.

The first thing to realize is that many people who believe in all sorts of weird things are not stupid; at least, not in the generally accepted sense of the term. Sure, if we define intelligence as the ability to grasp the real world, then anybody who does not understand quantum mechanics is an idiot. But remember the immortal words of physicist Richard Feynman: "If you think you understand quantum mechanics, you don't understand quantum mechanics."

No, the fact is that many people who believe in pseudoscience live successful lives. Some are college graduates. They can understand very well the reality of everyday life; sometimes they even successfully make complex decisions such as investing their money or planning a career. The answer must therefore lie elsewhere.

I think the problem is in what we mean by "understanding reality." Thomas Henry Huxley, the 19th century scientist known as "Darwin's bulldog," was very successful in lecturing to the general public, to an extent that neither Richard Dawkins nor Stephen Gould can dream of today. Huxley's fundamental philosophy was that science is common sense writ large. Since most people are equipped with both an innate curiosity and a moderate dose of common sense, if we explain things appealing to their already existing mental tools they will understand. Indeed, this is the philosophy behind most science documentaries.

The problem is that most modern science is not a matter of common sense at all! On the contrary, from physics to cosmology, from evolutionary to molecular biology, our current scientific understanding of the world is extremely counter-intuitive. The reason for this is that science's realm of investigation now literally spans the whole of creation, from the beginning of time until now (roughly 20 billion years) and from the subatomic level to the largest aggregates of galaxies. Let us remember that in Huxley's time most scientists thought the earth was a few million years old, the existence of galaxies was yet to be discovered, and nobody had the foggiest idea of what an atom or a gene was.

Evolutionary psychologists such as Steven Pinker suggest an explanation for this state of affairs. According to the standard Darwinian theory, our brains are at least in part the result of natural selection to improve our fitness; but the question is: to what kind of environment? Obviously, the one that we have inhabited for most of our evolutionary existence: forests and savannahs, where "reality" meant being able to procure food and mates while carefully avoiding predators. Is it any wonder, then, that we simply can't understand quantum mechanics?

If we add to this mix the fact that people still want answers to the fundamental questions of life (probably an annoying byproduct of being self-aware), it doesn't take much to understand why evolution and the Big Bang are discarded in favor of all-powerful and all-good imaginary friends who watch over every detail of our lives (especially the sexual scenes). Even the much-touted fact that Europeans accept evolution and are less religiously fundamentalist than Americans has, I would argue, a far less flattering explanation than it is usually assumed. It is not that Europeans are smarter or know more science (this is demonstrably not so); rather, it is probably that through history they have had their fill of religious wars and witch hunts and they are putting their current trust in another category of priests, the scientists (at least until these, too, screw things up in some major way).

So, what do we do about it? Unfortunately, identifying the causes doesn't necessarily cure the disease. We are in no position to reshape the human brain to bring it up to speed with the current human environment. We can, however, get more familiar with the large literature on human cognitive neuro-sciences; getting to know how the brain works has to be the first step toward designing better tools and arguments to educate people.

We can also be more understanding when we do confront an irrational position, and not dismiss our interlocutor as a simpleton (at least, not too quickly). Demonstrating sympathy and reaching out to the "right brain" may be a better way to get to the left one. But that is subject matter for another column.

N. 2, September 2000
The place of science

“Science bumps the ceiling of the corporeal plane…. From the metaphysical point of view its arms, lifted toward a zone of freedom that transcends coagulation, form the homing arc of the ‘love loop.’ They are science responding to Eternity’s love for the productions of time.” This grandiose bit of poetical nonsense concludes a chapter of Huston Smith’s Forgotten Truth dedicated to put science in its place. Smith is one of the world’s foremost authorities on religions, and his aim is to demonstrate that science is not an omnipotent force that can answer all questions posed by humanities. That is, science needs to be put in its place.

Fair enough, although I don’t know of any scientist who would claim otherwise. Contrary to what many anti-intellectuals maintain, science is by nature a much more humble enterprise than any religion or other ideology. This must be so given the self-correcting mechanisms that are incorporated into the scientific process, regardless of the occasional failures of individual scientists.

But what is most astounding in Smith’s essay is his attempt to develop a parallel between science and mysticism in order to “demonstrate” that the world’s great religions are capable of insights at least as powerful as science’s because they actually use similar tools. Let us then briefly examine this alleged parallelism and in the process try to understand what the proper place of both science and religion ought to be.

Smith’s first insight is that science and religion both claim that things are not as they seem. For example, you have the perception that the chair on which you are sitting is solid, but modern physics will tell you that it is made of mostly empty space. This, apparently, is analogous to the following bit from C.S. Lewis: “Christianity claims to be telling us about another world, about something behind the world we can touch and hear and see.” Never mind, of course, that physicists can bring sophisticated empirical evidence to support their claim about the emptiness of space, while Christianity is made up of a series of fantastic and contradictory stories backed by no evidence whatsoever.

Second, according to Smith, both science and religion claim that the world is not only different from what we perceive, but that there is “more” than we can see, and that the additional part is “stupendous.” Of course, electrons, quarks and neutrinos are “more” than we can see, although they are stupendous only to those few scientists who spend their lives working on them. Well, this is apparently the same as Shankara’s “notion of the extravagance of his vision of the summum bonum when he says that it cannot be obtained except through the merits of 100 billion well-lived incarnations,” a cornerstone of some Indian sacred text. I hope you are starting to appreciate the depths of the similarities between science and religion. But wait, there is more.

The two quests for truth also share the quality that this “more” that they seek to explore cannot be known in ordinary ways (otherwise, presumably, one would need neither science nor religion to get there). Science’s ways lead to apparent contradictions, such as in the case of some aspects of quantum mechanical theory. To which Smith

juxtaposes some gems from the Christian literature that he says uncannily resemble modern notions of quantum physics. For example, did not Nicholas of Cusa (De Visione Dei) write that “the wall of the Paradise in which Thou, Lord, dwellest is built of contradictories,” pretty much like the dual particle-wave nature of light? And did not Dionysius the Areopagite (The Divine Names) say “He is both at rest and in motion, and yet is in neither state,” thus anticipating Heisenberg’s indeterminacy principle? I am not making the examples up—these are Smith’s very own.

Fourth, both science and religion have found other ways of knowing this “more” which cannot be accessed by our ordinary senses. The language through which science accomplishes this is mathematics; the one of religion is, of course, mysticism, which Smith describes as a “comparably specialized way of knowing reality’s highest transcorporeal reaches” (whatever that means). This, according to Smith, is “not a state to be achieved but a condition to be recognized, for God has united his divine essence with our inmost being. Tat tvan asi; That thou art. Atman is Brahman; samsara, Nirvana”. Yes, of course.

The fifth parallelism is that in both science and religion these alternative ways of knowing need to be properly cultivated. A scientist needs to dedicate a lifetime to her education and research if she wants to make a contribution. This is apparently similar to the asceticism of saints because, as Bayazid ‘correctly’ pointed out, “The knowledge of God cannot be attained by seeking, but only those who seek it find it.”

Finally, in both science and religion profound knowing requires instruments. In science, these are microscopes, telescopes and particle accelerators. In religion, the equivalent is provided by the Revealed Texts, “Palomar telescopes that disclose the heavens that declare God’s glory.” If gods who dictate texts are not palatable to you, there is an alternative: “Spirit (the divine in man) and the Infinite (the divine in its transpersonal finality) are identical—man’s deepest unconscious is the mountain at the bottom of the lake.” Get it?

I would not have bothered the reader with this mountain of nonsense if it came from the local televangelist screaming bloody hell against the humanists’ corruption of the world. But this is Huston Smith, one of the most respected intellectual exponents of modern religionism, one who is hailed as offering the deepest insights that not just one, but all the world’s religions can offer!

This is a maddening example of what Richard Dawkins (in Unweaving the Rainbow) called “bad poetry.” Metaphors make much of the world’s literature a pleasure to read, but they can also be exceedingly misleading. There is no parallel whatsoever between science and religion. One can practice one or the other or both, but to pretend that they yield common insights into the nature of the world is an intellectual travesty. To go further, as Smith and so many religionists do, and assert that science is arrogant because it claims to provide the best answers to a circumscribed set of questions is astonishing, especially when the alleged alternative is so obviously the result of Pindaric flights of imagination. Now, here is my modest proposal: what if religions would

treat themselves to a little dose of humility? Imagine what the world would be like in that case.

N. 3, October 2000
Whence natural rights? A dialogue

HYPATIA: Hello, Simplicia, where are you going in such a hurry so early in the morning?

SIMPLICIA: Hello, my friend! I am to join a demonstration in favor of our fundamental rights we hold as human beings.

H: Oh, and what rights could anybody possibly have that are so indisputable?

S: Surely you are jesting. Have you not heard of the Declaration of Independence? Do you not recall that “We hold these truths to be self-evident, that all men are created equal, that they are endowed with certain inalienable Rights, that among these are Life, Liberty and the Pursuit of Happiness?”

H: I also recall that the man who uttered those words made plenty of exceptions for women and men of colors other than his own when it was most convenient for him.

S: Fair enough, but the purity of the principle is more important than the faulty actuation of the same.

H: Let me concede that for a moment. Nevertheless, just because somebody said it, or because it appeals to our sense of poetry, it does not follow that it is true. What arguments can you possibly adduce for the existence of natural rights?

S: As I mentioned a minute ago, are they not self-evident?

H: Not to me, they are not. On the contrary, it is self-evident that people have to struggle everywhere to even approach what you consider obvious. Would it not be the case that if rights were universal and incontestable facts of life, few if any human beings would contest them, in principle, if not in practice? Doesn’t everybody agree on the fact that people have to feed themselves in order to survive? That is because it indeed is a fact of life.

S: Ah, my dear Hypatia, but you know very well of people who allow others to starve, either through inaction or by pernicious withdrawal of the necessary goods.

H: True enough, Simplicia, but not even those people would deny the fact that people have to eat. They will only deny that it is their right to do so, if you see the difference.

S: I do indeed. So, you are saying that universal rights cannot be justified by appeal to agreement among human beings, because such agreement is lacking.

H: My point exactly.

S: But what about other sources of natural rights? Is it not conceivable that they could come from things other than human societies? After all, humans did not invent the necessity of food; it is a thing that comes from nature herself.

H: That is indeed a possibility. However, it seems logical that if one wants to derive rights from nature one should dispassionately observe what happens in nature and then use such observations as guidance to establish an independent foundation for rights, is it not so?

S: That does seem like the logical course of action.

H: And yet, if we were to do so in practice, we would probably come up with a set of principles that do not reflect at all the kinds of rights you seem to have in mind!

S: How so, Hypatia?

H: Because if one looks at nature one can see that animals and plants are certainly not created equal. On the contrary, it is precisely their differences that make it possible for natural selection to shape the face of the organic world, as Mr. Darwin has shown long ago. The negation of the so-called right to life is at the very basis of the struggle for existence that makes evolution possible; as for liberty, it is guaranteed only insofar one animal can defend it against intrusion from competitors or predators; and happiness is too vague of a word to even consider as the proper object of a serious philosophical discussion.

S: Shall I then conclude that you subscribe to the simple notion that nature is red in tooth and claws or that, as Mr. Hobbes put it, life in nature is “solitary, poor, nasty, brutish, and short?”

H: I am much too much of an optimist to agree to that, my dear Simplicia. However, I would conclude from even a cursory observation of nature that she is neither moral nor immoral, neither good nor bad, but simply is. I believe it was David Hume who warned against the logical jump from what is to what ought to be, and it seems to me that therefore one cannot defend natural rights by appealing to nature; a rather uncomfortable situation for the promoters of such rights.

S: Even if I grant you that neither humans nor nature can be the sources of universal rights, most people would not be faced in the least by these difficulties, and would simply retort that there are higher authorities than both.

H: Ah, you mean some gods or goddesses!

S: Precisely: wouldn’t a divinity be the ultimate source and guarantor of universal rights?

H: It surely would, if not for any other reason than such divinity would presumably have the power to impose her will on us mere mortals.

S: There, then, do I see your skepticism about the possibility of natural rights beginning to wane?

H: No so fast, my dear friend. Your latest answer to our conundrum begs the question in two ways: how do you know there is such a divinity and, even if we should accept her existence as a matter of hypothesis, how do you know what kinds of rights does she endorse?

S: My dear Hypatia, you know very well that such a line of inquiry would bring us far into an altogether new direction of conversation, and that would definitely mean that I would be late to my protest march.

H: Indeed it would. But it is no matter to brush aside. You might agree at least to the observation that there are many people who have spent a great deal of time thinking about the existence of god and the nature of god's will, without reaching even a minimal form of agreement. Furthermore, you know that many cogent doubts have been raised and objections construed against all the major arguments in favor of the existence of a deity.

S: Alas, this is all very true.

H: Then you cannot rest your defense of natural rights on the assumption of the existence of a god, because that would be the substitution of one mystery with an even greater mystery.

S: But, Hypatia, surely you see that by rejecting all possible sources of universal rights you are forced in the position that anything goes and that we have no rational motive to fight for anything that is dear to us.

H: Not at all. You seem to assume, Simplicia, that there are only two options: either rights are universal, or they don't exist.

S: Is there a compromise somewhere that I have missed?

H: Most definitely! Let me explain my position with an example. I know you love the work of the painter Picasso. Surely you will agree that a painting by him cannot last forever, no matter how carefully preserved.

S: Yes, but I don't see where you could possibly be going with this.

H: Even though you know that one day the painting will be gone forever, you still love to look at it now, to go to the museum every time you can, and even to contribute to its preservation by donating funds to the museum.

S: Yes, and…?

H: Well, Simplicia, is not this an example of something that is not universal, and yet is very precious? If you were to apply your nihilism to art, you wouldn't care a bit about what happens to Picasso's work for the simple reason that it is not a universal thing, it won't last forever.

S: So you are saying that even though there may be no guarantor of universal rights, we are nevertheless justified in defending and caring for them with all our energies because they matter to us!

H: Precisely. It matters not that you cannot justify, for example, your right to freedom by universal laws. Freedom is still something that most human beings want, and we are bound to fight for a society that grants such right simply because we think it is a better society than any other alternative.

S: Thanks, Hypatia. I am not sure that I agree with all your points, but this conversation did throw some interesting light on what I am doing and why. I have to run to the demonstration, now!

H: Until the next time, then, my friend.

N. 4, November 2000
Intelligent Design, the classical argument

“In crossing a heath, suppose I pitched my foot against a stone and were asked how the stone came to be there, I might possibly answer that for anything I knew to the contrary it had lain there forever. ... But suppose I had found a watch upon the ground, and it should be inquired how the watch happened to be in that place, I should hardly think of the answer which I had before given, that for anything I knew the watch might have always been there.”

These famous words were written in 1831 by the Reverend William Paley (in Natural Theology: or, Evidences of the Existence and Attributes of the Deity, Collected from the Appearances of Nature) and constitute the best-known rendition of the classical argument from design for the existence of god. Essentially, Paley said that nobody would necessarily invoke a supernatural designer in order to account for the existence of simple rocks, but complex and marvelously functional objects such as eyes beg for an explanation that transcends natural laws. If there is a watch, there was a watchmaker; ergo, if there is an eye, there must have been an intelligent designer of that eye.

Unfortunately for Paley, the famous skeptic philosopher David Hume had already refuted his argument, more than 50 years before Paley’s formulation. In his Dialogues Concerning Natural Religion, Hume left it to his legendary character, Philo, to concisely explain what is wrong with the argument from design:

“The world plainly resembles more an animal or a vegetable than it does a watch or knitting-loom. Its cause, therefore, it is more probable, resembles the cause of the former. The cause of the former is generation or vegetation.”

It is interesting that the argument from design is still the most popularly cited reason for why people believe in god according to a survey by Michael Shermer published in How We Believe (2000). It is therefore important for us to examine more closely the structure of Hume’s critique and understand where exactly the intelligent design argument falls flat. In the exposition below I will add my commentary and examples to clarify each point, given that Hume’s language is at times obscure and obviously not up to date on our current knowledge of the physical universe.

One can discern six objections to the argument from intelligent design in a complete reading of Hume’s Dialogue:

1. The analogy between the universe and human artifacts is not convincing. In the quotation above, Hume does not think that the universe resembles a complex machine at all. While the regularity of the laws of nature may superficially inspire the analogy, human artifacts are always clearly designed for a function. It often takes quite a bit of imagination to see what the purpose of some aspects of the universe really is. Biologist J.B.S. Haldane once answered a reporter who asked what his study of genetics told him about God: “He must have an inordinate fondness for beetles,” referring to the

hundreds of thousands of species of these insects existing for no apparent purpose other than their own reproduction.

2. Intelligence is only one of the active causes in the world. Many natural phenomena obviously do not require intelligence to occur. Tides, for example, would hardly make a good choice for Paley, since their explanation in terms of simple gravitational interactions does not require any intelligent design.

3. Even if intelligence is everywhere operative now, it does not follow that we can ascribe to it the origins of the universe. This is logically true, and can be illustrated in modern terms if we imagine that somebody one day demonstrates that life on Earth was seeded by a race of extremely intelligent extraterrestrials. This, of course, would not make them gods, and would not provide an explanation for the origin of the extraterrestrials, nor for the universe as a whole. In fact, humans may someday do something of the sort, without because of this being elevated to divine status (other than perhaps by the simple-minded results of our own experiments).

4. The origin of the universe is a single unique case and so analogies are pointless. This is a subtle but very good point: while we have plenty of natural objects, organisms and human artifacts, we only have one universe. Science can derive meaningful analogies by comparing populations of objects or entities. While we may compare and contrast the attributes of rocks, eyes, tides and watches, to what shall we compare the universe? Anything we might think of would be comparing a part of the whole to the whole itself, and we are unable to find another self-contained whole for comparison. We may conceive of an omnipresent god as an analogy for the universe, but unfortunately the analogy offers no insights of scientific value. It is also unlikely that the analogy would help theology. Is god spherical or doughnut-shaped? Will god expand forever from an explosive beginning, or does god alternate through phases of expansion and contraction?

5. The analogy between human and divine mind is clearly anthropomorphic. Nature resembles a mindless organism rather than a purposeful and intelligent one. This is another way to put objection #1, this time by highlighting the parochialism of a theology that would pretend to understand the mind of god simply as a version of the human mind writ large.

6. The fruit of anthropomorphic thinking is a finite God. Here Hume goes on the counter-attack by showing that if the argument from design is taken seriously, one has to conclude that the god acting in the universe is very different from the Christian variety. Since there is no independent argument for the perfection of the designer, we have to judge its ability and character from what we see of the universe. And to paraphrase Bertrand Russell, if I had millions of years of time and infinite power and had come up with the universe as we know it, I should be ashamed of myself.

Hume was a skeptic, but not a fool. He published his Dialogues on religion posthumously, in 1779. They are still one of the most lucid critiques of the most commonly used argument in favor of theism. And that, my friends, is true immortality.

N. 5, December 2000
Intelligent Design, the modern argument

Let's face it: creationists don't have an easy time claiming academic superiority over their opponents. As much as they call themselves "scientific" creationists (essentially an oxymoron), and despite the existence of the Institute for Creation Research (whatever that is), and even of creationist museums, anybody can see that the credentials of most creationists are as good as those of a car salesman. Yet, there is a group of creationists (who don't actually like being labeled as such) that is trying—with some success—to make headway in the academic world, or at least with the media and some relatively high ranking politicians. Meet the Intelligent Design (ID) movement, perhaps the most sophisticated attack on modern science mounted so far.

Mind you, gaining a sympathetic ear within academia does not necessarily imply intellectual respectability. Post-modernist philosophers and social scientists have been littering college classrooms and wasting a lot of perfectly good trees to spread nonsense about the alleged equal access to truth of any "cultural construction," putting science and astrology (or, for that matter, creationism) on equal footing. But some ID exponents have legitimate PhDs in science disciplines, they don't make wild claims about a young earth or a six-day creation, and even manage to get published by major academic presses. So, who are these neo-creationists, and is there anything of substance to their claims about evidence for an intelligent creator of the universe?

Probably the first and most important salvo of the modern ID movement was Michael Behe's book, Darwin's Black Box: the Biochemical Challenge to Evolution (1996). Behe is a biochemist at Lehigh University in Pennsylvania and clearly says that he accepts a lot of evolution, so much so that he should get in plenty of trouble with "old-time religion" creationists. However, Behe draws the line at the molecular level: while evolutionists might be able to explain how humans descended from other primates, and might even have a good explanation for the evolution of the eye, they can't tell us how complex biochemical pathways came into existence. Take blood clotting, for example. In order for the blood to coagulate when a cut through the skin is made, several proteins have to act in a precise sequence. Take any of them out, and you bleed to death. Or consider the flagellum of a bacterium (the "tail" that allows some bacteria to swim). It is made of several parts intricately interconnected to each other. Again, take one of them away, and the bacterial cell will be stuck in place forever. But, notices Behe, evolution is supposed to work gradually and to assemble structures that work at every single step (since it cannot predict the future use of something). This creates an apparent paradox whence a mindless natural force is supposed to come up with something that smells terribly of intelligent design. Isn't this a deathblow to evolution as the explanation of life's "irreducible" complexity?

Not so fast. There are a few things missing from Behe's scenario which are worth considering briefly. First, he has not done his homework. Contrary to what he repeatedly claims in his book, biologists have done a bit of research on the evolution of biochemical pathways, and there are several known examples of bacterial flagella that are simpler than the one Behe conveniently uses. It doesn't take a rocket scientist (or a

biochemist) to figure out that in fact these simpler versions could easily represent intermediate steps toward complex flagella. Second, it is not true—again contra Behe—that biochemical pathways are assembled in a way that one cannot take any element away without having the whole system collapsing. In fact, most of genetical research is based on the ability to produce mutations that knock down certain genes (and therefore certain components of biochemical pathways) while still yielding a functional organism to be studied. One of the major discoveries of 20th century molecular biology (which Behe must have somehow missed) is that organisms are not irreducibly complex at all; rather, they show redundant complexity: they are made of several parts that have no unique and irreplaceable function. As biologist Francois Jacob put it, this is exactly what you would expect if natural selection worked like a bricoleur rather than a cunning engineer. A bricoleur is somebody who assembles new things out of old parts that are easily available. The result is bound to be complex, redundant, suboptimal, and not too pretty. Exactly like living organisms, and precisely what you would expect from a natural phenomenon. No intelligent design required.

Behe makes at least two fundamental mistakes in his attack against evolutionary biology (other than neglecting to check the available literature more thoroughly). Perhaps the subtler of the two is that he completely ignores the fact that evolutionary biology deals with historical as well as current events. If one picks a modern organism, say a bacterium of the species Escherichia coli, and tries to imagine how it could have evolved, one is up against a huge problem: what you see today under the microscope is not a “primitive” organism, but the result of (literally) billions of years of change. As we know from organisms that actually leave fossils (contrary to most bacteria), more than 99% of the species that ever existed went extinct. Since most of these don’t leave fossils (especially bacteria), we are lucky if we see a few intermediate links at all, alive or in the fossil record. No wonder that evolution may look like a series of huge jumps that could not possibly have been the result of natural selection. Yet Behe behaves as if we didn’t know anything about extinction and evolution, and bases his argument on an extremely naive picture of biological research and of science in general.

The second fatal mistake is common to all versions of Intelligent Design: the whole approach is essentially based on an argument from ignorance. Let us assume that biologists really don’t have the foggiest about the way a particular biochemical pathway (aerobic respiration in mitochondria, for example) came about. What is that supposed to prove? If Behe were alive at the time of Aristotle, would he be arguing that lightning is clear proof of Zeus’ existence because we have no idea of how a natural phenomenon could possibly provoke such a sudden discharge of energy? And yet this is exactly what the core of Behe’s argument is: since we don’t know how it happened, it must have been God. Sorry, Michael, but science is about working hard to find the answers. Bailing out while invoking a Deus-ex-machina is not the name of the game.

N. 6, January 2001
Split brains, paradigm shifts, and why it is so difficult to be a skeptic

The human brain is a funny machine. Imperfectly designed by natural selection, it finds itself in an environment that has little resemblance with the one it evolved in. Gone is the savannah in which our ancestors had to guard themselves from fierce creatures. Instead, we live in a complex and ever expanding social milieu, our neighborhood now encompassing the whole planet. Is it any wonder that our poor brains are not doing so well in this brave new wired world?

Our brains seem to fail to grasp reality, as demonstrated by the fact that a majority of Americans don't "believe" in evolution (whatever "believing" in a scientific theory means), while a sizable percentage is ready to accept the existence of an imaginary all-powerful god, as well as of the devil, hell, and a slew of angels. Why is it so difficult to be a reasonably skeptical person? What is it that makes so many apparently intelligent people so gullible about things that their brains clearly have the power to master? And-perhaps most importantly for the skeptic-how do we get people to change their minds in an informed way on so wide an array of irrationalities?

Obviously, I am not going to present the reader with the magic bullet that can answer these questions, but a starting point is being provided by recent research in neurobiology. It turns out that lately we have learned a lot about how the brain works and why it makes mistakes while interpreting reality. Since our most powerful tool doesn't come with an owner's manual, it may pay off to spend a little time thinking about how we think.

Perhaps one of the most dramatic ways we are learning about the brain is by studying patients who literally have a split one. The brain is made of two hemispheres, joined by a structure called the corpus callosum which contains nerve fibers that continuously exchange signals between the right and left hemisphere. Some individuals have suffered more or less complete damage to the corpus callosum, either because of a stroke or because of a surgical operation. These subjects are invaluable to neurobiologists because it is possible to interrogate the right and left hemispheres separately, see how differently they think, and then piece this information together to reconstruct the thought patterns of normal individuals. The problem with attempting to "talk" to both hemispheres is that language is controlled by the left one, the only hemisphere that can articulate things. Fortunately, the right side can still "respond" to interrogations by virtue of its control over the motor functions of the left half of the body, including the arm and hand.

Perhaps the most astonishing thing neurobiologists have discovered from split-brain patients is that the left hemisphere, which normally "dominates" the right one, is literally in charge of our view of the world. And it fights hard to preserve it. In a wonderfully elegant experiment, a group of researchers led by Michael Gazzaniga at Dartmouth College showed pictures to the right and left hemispheres of a split-brain patient and then asked each hemisphere to pick another picture to accompany the one originally presented. The right side was shown (through the left half of the visual field) a house

with snow and, logically enough, it picked a shovel. The left hemisphere was shown a chicken leg (through the right half of the visual field), and it picked a chicken head-also quite logically. The experimenters then verbally asked the patient to explain his choices. The left hemisphere was the only one that could articulate an answer, but remember-it did not know why his right counterpart had chosen a shovel, since the information about the house with the snow did not cross the severed corpus callosum. The patient's answer was as astounding as illuminating: "Oh, that's simple. The chicken claw goes with the chicken [which was true], and you need a shovel to clean out the chicken shed [which was coherent, but completely false]." In other words, the left hemisphere acted as an interpreter of the worldview of the individual and fabricated a just-so story to fit all the available data!

These sort of experiments have shown that the left hemisphere is in charge of our worldview, of the paradigms we currently hold about a variety of aspects of reality. In normal patients, these paradigms are constantly evaluated against external evidence, gathered by both hemispheres through a suite of sensorial inputs. The left interpreter has the all-important function of making sense of the world, and it does a reasonably good job at it. However, when the incoming data is insufficient, or when some piece of evidence contradicts the currently held view, the left hemisphere either rejects the unfit information or it distorts it so to make sense of it. This process of "rationalizing" the world goes on up to a certain point. If the degree of conflicting information is too high (i.e., there is too much dissonance between what one believes and what one perceives) then that most stupendous phenomenon suddenly occurs: we change our minds (literally)!

The problem that rational people face, then, is twofold. On the one hand, the brain has evolved a powerful mechanism to avoid to change its mind too often, which means that people will stubbornly continue to believe all sorts of nonsense because it is less painful than to radically alter their worldview. On the other hand, we know that the problem is all the more insurmountable when the data fed to the subject is poor, and unfortunately most of what modern human beings are exposed to by the media is pure garbage.

However, there is no need to despair just yet. Understanding the problem is a necessary (though by all means not sufficient) step to solve it. Realizing where people's stubbornness (and sometimes our own) comes from will help not getting unduly irritated or downright nasty when facing patent irrationality in our fellow human beings. And empathy is one important step toward connecting with anybody. The second message of modern neurobiological research is perhaps an old one, but which now comes with the weight of evidence: education is our (slow) way out. What we need to do is to keep educating people, to feed good information to the brain's interpreter. If neurobiologists are correct, most brains will come to understand reality if properly nurtured. It is ignorance which provides the necessity for just-so stories, with all the tragic consequences that follow when people defend a flawed worldview at all costs.

N. 7, February 2001

The greatest democracy in the world and the unfairness of American elections

The United States of America is the self-professed greatest democracy in the world. Besides the obvious offensiveness of such claim to countries that are equally democratic and that can claim a longer history of civil liberties than the US can, the very idea flies in the face of the actual structure of the American electoral system. This has been painfully demonstrated by the recent squabble between George Bush and Al Gore on who really won the election.

Let's start with democracy 101. Ever since ancient Athens, democracy means the rule of the people (though for a long time the "people" have not included women, economically "lower" classes and slaves). By that simple criterion, the American system is undemocratic because it allows someone to win the presidential election even though she lost the popular vote—as has just happened to Gore and did happen a few other times before. This bizarre situation can occur because in the US the people don't really vote, electors chosen by each State do. And since each State is guaranteed a certain number of electoral votes which is not commensurate to its population, rural states are over-represented and Mr. Bush won by acreage rather than votes. As a citizen of New Hampshire put it recently during one of many interviews the media broadcasted after the 2000 elections, "If we went to a proportional system, New Hampshire would count for nothing." As it should, if this were really a democracy.

According to historians, there was originally a good reason for such a peculiar system. The United States were not really united, but rather resembled a loose confederation of largely independent entities, Swiss-style. Under those conditions, it was only natural to give precedence to the abstract entity of a "State" rather than to each of its citizens. Of course, the United States has never really become a nation—witness the harsh debates and court rulings on the limits of State vs. Federal power, but the fact remains that such a system is anything but democratic.

A second major fault with the greatest democracy of the world is that typically a minority of its population bothers to go to the voting booth. Furthermore, Republicans in Congress have strenuously fought to keep it that way, for example opposing bills such as the motor registration act, which would make it easier for people to register to vote. Now, in real democracies, the percentage of people casting their ballots is much higher than the pitiful American average, and people are automatically registered based on their biographical data (they receive the registration at home when they turn 18—but of course this would mean that the Government needs to know who you are and where you live, God forbid).

The situation is so bad that several years ago the Christian coalition devised a tactic to get their favorite people elected, called "the 12% strategy." Since about 50% of eligible Americans are actually registered to vote, and of these little more than half bother to show up to cast their ballots, you need to get the vote of half of these (roughly 12% of the whole population) to be insured victory. On top of this, add the even stranger primary system, in which only a tiny fraction of really devoted people vote, thereby

dramatically influencing the general election by eliminating candidates that might do well with the population at large but don't fit the opinions of a skewed minority of activists. Here is some food for thought: twenty more millions of people watched the 2001 Super Bowl than cast their vote in the 2000 elections.

One could go even further and suggest that no current voting system is actually democratic, no matter the country in which it is implemented. A recent article by Dana Mackenzie in Discover magazine (November 2000) clearly demonstrates why. It turns out that people have been studying voting systems for quite a while, and better options than the proportional system adopted by most countries have been clearly devised—indeed, they have been historically used by different cultures in different times.

Perhaps the simplest alternative is what is known as approval voting, which dates back to the 13th century, when it was used in Venice to elect magistrates. In this system, a person casts one vote for every candidate that she considers qualified. It works much like an opinion poll, with the difference that the results are added up to determine the winner. One of the advantages of approval voting is that you can vote for a candidate likely to loose—say, Ralph Nader—and don't feel like you are wasting your vote: he will get a good percentage of points while you can also cast your vote for somebody who is more likely to actually win. If approval voting had been used in the 2000 US elections, John McCain would have won, based on polls conducted in February. Furthermore, approval voting would have spared Minnesota from electing Jesse Ventura, and New Hampshire from handing the State's primary to Pat Buchanan in 1996.

Another alternative to standard voting systems is the Borda count, named after a French physician and hero of the American Revolution. This system was actually in use in the Roman senate at least since 105 CE. It is similar to the method used to rank football and basketball college teams: each voter ranks all the candidates from top to bottom. If we take a poll by the Sacramento Bee during California's open primaries in 2000, McCain would have beaten Gore 48 to 43, Gore would have bettered Bush 51 to 43, and McCain would have surpassed Bush 50 to 45. Overall, the final rank would have been McCain 98, Gore 94, and Bush 88. Quite a different outcome from what actually happened!

In both the approval and the Borda systems voters are asked something that is missing from the current system: they need to choose who they will pick if their favorite is eliminated. More powers to the voters, a better democracy.

Of course, neither system is perfect, but the point is that most people in the US don't even realize that their way is one of the worst among those currently practiced by the world's democracies, and serious discussion hasn't begun in any country on how to improve the actual democratic value of our voting systems. Given that we have to live with the results for several years to come, wouldn't it be worth taking a serious look at the alternatives?

N. 8, March 2001
Game theory, rational egoism, and the evolution of fairness

Is it rational to be ethical? Many philosophers have wrestled with this most fundamental of questions, attempting to clarify whether humans are well served by ethical rules or whether they weigh us down. Would we really be better off if we all gave in to the desire to just watch out for our own interests and take the greatest advantage to ourselves whenever we can? Ayn Rand, for one, thought that the only rational behavior is egoism, and books aiming at increasing personal wealth (presumably at the expense of someone else's wealth) regularly make the bestsellers list.

Plato, Kant, and John Stuart Mill, to mention a few, have tried to show that there is more to life than selfishness. In the Republic, Plato has Socrates defending his philosophy against the claim that justice and fairness are only whatever rich and powerful people decide they are. But the arguments of his opponents—that we can see plenty of examples of unjust people who have a great life and of just ones who suffer in equally great manner—seem more convincing than the high-mindedness of the father of philosophy.

Kant attempted to reject what he saw as the nihilistic attitude of Christianity, where you are good now because you will get an infinite payoff later, and to establish independent rational foundations for morality. Therefore he suggested that in order to decide if something is ethical or not one has to ask what would happen if everybody were adopting the same behavior. However, Kant never explained why his version of rational ethics is indeed rational. Rand would object that establishing double standards, one for yourself and one for the rest of the universe, makes perfect sense.

Mill also tried to establish ethics on firm rational foundations, in his case improving on Jeremy Bentham's idea of utilitarianism. In chapter two of his book Utilitarianism, Mill writes: "Actions are right in proportion as they tend to promote happiness; wrong as they tend to produce the reverse of happiness." Leaving aside the thorny question of what happiness is and the difficulty of actually making such calculations, one still has to answer the fundamental question of why one should care about increasing the average degree of happiness instead of just one's own.

Things got worse with the advent of modern evolutionary biology. It seemed for a long time that Darwin's theory would provide the naturalistic basis for the ultimate selfish universe: nature red in tooth and claw evokes images of "every man for himself," in pure Randian style. In fact, Herbert Spencer popularized the infamous doctrine of "Social Darwinism" (which Darwin never espoused) well before Ayn Rand wrote Atlas Shrugged.

Recently, however, several scientists and philosophers have been taking a second look at evolutionary theory and its relationship with ethics, and are finding new ways of realizing the project of Plato, Kant, and Mill of deriving a fundamentally rational way of being ethical. Elliot Sober and David Sloan Wilson, in their Unto Others: the Psychology and Evolution of Unselfish Behavior, as well as Peter Singer in A Darwinian Left:

Politics, Evolution and Cooperation, argue that human beings evolved as social animals, not as lone, self-reliant brutes. In a society, cooperative behavior (or at least, a balance between cooperation and selfishness) will be selected in favor, while looking out exclusively for number one will be ostracized because it reduces the fitness of most individuals and of the group as a whole.

All of this sounds good, but does it actually work? A recent study published in Science by Martin Nowak, Karen Page and Karl Sigmund provides a splendid example of how mathematical evolutionary theory can be applied to ethics, and how in fact social evolution favors fair and cooperative behavior. Nowak and coworkers tackled the problem posed by the so-called “ultimatum game.” In it, two players are offered the possibility of winning a pot of money, but they have to agree on how to divide it. One of the players, the proposer, makes an offer of a split ($90 for me, $10 for you, for example) to the other player; the other player, the responder, has the option of accepting or rejecting. If she rejects, the game is over and neither of them gets any money.

It is easy to demonstrate that the rational strategy is for the proposer to behave egotistically and to suggest a highly uneven split in which she takes most of the money, and for the responder to accept. The alternative is that neither of them gets anything. However, when real human beings from a variety of cultures and using a panoply of rewards play the game the outcome is invariably a fair share of the prize. This would seem prima facie evidence that the human sense of fair play overwhelms mere rationality and thwarts the rationalistic prediction. On the other hand, it would also provide Ayn Rand with an argument that most humans are simply stupid, because they don’t appreciate the math behind the game.

Nowak and colleagues, however, simulated the evolution of the game in a situation in which several players get to interact repeatedly. That is, they considered a social situation rather than isolated encounters. If the players have memory of previous encounters (i.e., each player builds a “reputation” in the group), then the winning strategy is to be fair because people are willing to punish dishonest proposers, which increases their own reputation for fairness and damages the proposer’s reputation for the next round. This means that—given the social environment—it is rational to be less selfish toward your neighbors.

While we are certainly far from a satisfying mathematical and evolutionary theory of morality, it seems that science does, after all, have something to say about optimal ethical rules. And the emerging picture is one of fairness—not egotism—as the smart choice to make.

N. 9, April 2001
Red or blue? What kind of life would you choose?

Is it better to live a harsh reality or a comfortable fantasy? And why? This is one interpretation of a key question faced by Neo, the hero of the movie The Matrix. Neo has a conversation with the rather enigmatic Morpheus, who explains that what Neo has always perceived as "reality," including his friends, his job, and his entire existence in 20th century America, is actually a simulation caused by a race of computers that has taken over earth long ago and has enslaved human beings. Our brains, according to Morpheus, are simply kept alive in a fantasy world so that we can provide electricity to the machines. But a few individuals are occasionally able to disconnect themselves from this matrix of fantasy and regain control of their body, thereby fighting a desperate battle for supremacy on the planet. Now, Morpheus says, Neo has two choices. If he takes a blue pill that he is being offered, he will forget about the matrix and go back to his illusory but relatively safe and predictable life. Take the red pill, however, and you will see the world as it really is. The trade-off is clear: comfortable fantasy or harsh reality? What would you choose, and why?

Some philosophy students, who essentially questioned the assumptions underlying the choice, have proposed a radical way around the dilemma. What makes us think that Morpheus is telling the truth? What if it is the red pill that leads to an imaginary world? This is a valid epistemological point. How do you know what is real and what is not? What kind of evidence do you have that you were dreaming last night of being a butterfly, and are you not in fact a butterfly who is now dreaming of being a human being? There are some reasonable, though by no means foolproof, ways out of this basic dilemma. For example, dreams—unlike what we consider reality—have no temporal continuity and are often characterized by arbitrary rules of engagement (contrary to, say, the laws of physics). But Neo did not have such a luxury, since in his case both situations felt very real. Furthermore, some people on drugs, or affected by particular brain disorders, really do have a hard time distinguishing between reality and hallucinations.

However, this kind of existential response based on radical skepticism skirts an interesting question. Let us assume that we have good reasons to believe Morpheus (as Neo does in the movie, given some recent disturbing experiences that had shaken his conception of reality); what would you then do about it?

In essence, the choice can be seen as one between truth and happiness (albeit the latter may be of a rather limited variety). In this sense, the question becomes of utmost interest and of surprising practical relevance. For example, you are faced by this dilemma when you examine your religious beliefs. Since there is no more evidence for the existence of a god than for the existence of unicorns, but believing in god makes you feel more comfortable and gives eternal meaning to your life, should you believe the unbelievable or attempt to find your way through the tortuous road of secular morality and meaning? Of course, most people don't really choose to believe in a god, they rather culturally inherit such belief from their parents and friends; but most of us do arrive at the rejection of god by an often long process of questioning during which we

are faced with terrible questions of existential meaning and of good and evil. In this sense, consciously becoming an agnostic or atheist is indeed more difficult than the other path, and it is like taking Neo's red pill.

Less controversial (if you actually believe in god and don't therefore buy the above argument) but equally dramatic is the choice of taking or not taking drugs. The "reality" offered by drugs is more pleasurable (at least temporarily) than the real life out there, especially for poor or psychologically damaged people. Why not avoid the pain and go for the blue option? A minor version of the same question could be framed in terms of choosing entertainment over meaningful activities: why not just spend your life watching TV, or drinking beer, or—when this will be technologically feasible—shut yourself in a holodeck-like virtual reality where you can have all the food, sex partners, and riches you like?

Most people I talked to (but this was by no means an unbiased sample) chose the red pill, yet I found quite a bit of disagreement on the motives. Essentially, however, there are two main reasons that can be advanced for taking red over blue: pragmatic and ethical ones.

The pragmatic motive is that living in an imaginary world can be pretty dangerous. One of the reasons human beings have been so successful during evolution is precisely because our large brains have an uncanny capability of assessing reality, of finding cause-effect connections, and therefore of manipulating the world to our advantage. One could object that plenty of people in modern society believe all sorts of weird things, from astrology to gods, and yet seem to function reasonably well, thank you very much. But this is because, in fact, most of the time they do not act on their beliefs. For example, while many people would claim to leave their lives in god's hands when they are so questioned, they nevertheless take out insurance policies, look on both sides of the road before crossing, and go regularly to the doctor, if they can afford it. When they do behave according to a strict adherence to fantastic beliefs, bad things happen. A recurrent example is offered by Christian Scientists who die (or, worse, let their children die) because they do not believe in getting medical attention when they are sick. Reality does have a way of biting your back side.

The ethical reason represents an even more general answer to Neo's question: regardless of practical consequences or of feelings of pleasure and discomfort, it is simply right to choose the red pill. We are social beings, and by nature we have a tendency to relate to other humans and to help them out, especially if they are our kin or friends. This tendency constitutes the basis of most of our ethical systems, and it implies that it is our duty not to shut ourselves out of the world in order to simply seek pleasure or avoid pain. This, however, begs the question of what is right to begin with and of how we determine it, something that I have covered, and will come back to, in this column. Essentially, we are now faced with the radical moral skeptic question: why bother, if it does not affect your own happiness?

The point is, even a science fiction movie can generate profound philosophical questions, and these in turn are not necessarily idle speculations on the sex of angels

but give us the opportunity to examine some of our most basic choices and their often far-reaching consequences. And remember, an unexamined life is not worth living. Or is it?

N. 10, May 2001
The many faces of anti-intellectualism

Universities should not subsidize intellectual curiosity. This oxymoronic statement was uttered by none other than then candidate for the governorship of California Ronald Reagan in the late 1960s. The astounding thing is not that somebody like Reagan would actually say something so outrageously stupid, but that this helped him winning the election and ushering a new era of official anti-intellectualism in America. This is continuing to this day, witness the fact that the current president, George W. Bush, has run a campaign as the (Yale-educated!) champion of the everyday man against the "pointed-head" intellectualism of rival Al Gore.

Anti-intellectualism has always been a powerful undercurrent in American culture, and it will probably play a major role in our society for a long time to come. Regardless of how depressing such thoughts might be, the first rule to win a war is to know thy enemy; which is why I'd like to discuss the major types of anti-intellectualism and how they threaten the very existence of a liberal society.

Richard Hofstadter, in a classic book on anti-intellectualism, first described the phenomenon in its entirety, and what I succinctly propose here is an elaboration on his main categories and on the more recent work of D. Rigney. The first kind of anti-intellectualism can be termed "anti-rationalism." This is the idea that rational thinking is both cold (as in lacking sensitivity) and amoral (which is apparently a bad thing, in some people's mind not sufficiently distinct from im-moral). The perception that scientists and philosophers—the very paragons of rationalism—are cold and insensitive is as widespread as it is false. If you know any individual belonging to these professions, you surely realize that they can get as emotional as the guy next door. The idea that rationality and emotions, science and poetry, cannot mix is simply unfounded. As Richard Dawkins has pointed out in Unweaving the Rainbow, science simply expands your ability to experience awe and wonder, it does not constrain it. As for a-morality, this view is best summarized in the words of John Cotton (back in 1642): "The more learned and witty you bee, the more fit to act for Satan you bee." I honestly never understood why God would not appreciate humor and culture. Then again, there is that story of Eve and Adam stealing the fruit of the tree of knowledge…

One can be anti-intellectual also by rejecting intellectualism because it is elitist. Anti-elitism is very peculiar to the American psyche, and it is virtually unknown in the rest of the universe. Most other people recognize that in matters of the intellect, as in any other human activity, there are people who do it better and others who are not quite as good. That does not—and should not—imply anything about the intrinsic worth (or lack thereof) of such people. Astonishingly, Americans don't have any problem with elitism per se: just watch the adoring crowds at a basketball game and the recursive tendency to set up athletes as "role models" for our youth. The underlying assumption seems to be that everybody can become an Olympic athlete, but that the way to science and letters is only reserved to the lucky few. Ironically, the truth is quite the opposite: while the chances of making it in professional sports are almost nil, a country with a large

system of public education and some of the best schools in the world can give the gift of intellectual pursuit to millions of people.

Suppose you are a mathematician and you are attending a cocktail party. Somebody approaches you for small talk and asks: what do you do? Chances are you'd rather answer that you are a traveling salesman than that you spend your time contemplating problems in set theory. This is because you are afraid of a third form of anti-intellectualism, unreflective instrumentalism. This is the idea that if something is not of immediate practical value it's not worth pursuing. Hence, most of science and all of philosophy should be thrown out the window. The root of this attack on the pursuit of knowledge is to be found in capitalism at its worse. Andrew Carnegie, for example, once quipped that classical studies are a waste of "precious years trying to extract education from an ignorant past." But the very idea of a liberal—not politically, but as opposed to practical—education is that it is far better to train somebody to think critically than to give her specific skills that will be out of date in a few years. Yet, captains of industry are not interested in your mental welfare; what they want is a bunch of mindless robots who are especially adept at carrying out whatever tasks will turn the highest profit for the stockholders. In this sense, intellectualism is a very subversive enterprise, which explains its persecution by rogues of the caliber of McCarthy and Reagan.

I recently had the pleasure and honor of attending a lecture by Kurt Vonnegut. He asked the audience to remember one thing from his visit: start calling your TV "the tantrum" and for God's sake, turn it off and start talking to each other. Or reading. The idea that intellectual pursuits are a lot of work and that it is far easier and more pleasurable to watch TV is the fourth kind of anti-intellectualism, unreflective hedonism. While I do not suggest to kill your TV, as some radical friends of mine would want you to do, do try to read a good book. I bet that the experience will be much more pleasurable than you thought. A novel by Vonnegut might be a good place to start.

We have net the enemy, and it is us, as Pogo concluded in the famous comic strip. The most pernicious kind of anti-intellectualism comes from other intellectuals. In recent years a movement called post-modernism (or decostructionism) has made headway in humanities departments throughout the US and has been given a sympathetic hearing by major media outlets. The idea is that knowledge is relative because it is a cultural construct. So, you are equally fine if you believe in evolution or creation, because these are both narratives "constructed" by pockets of our culture. Of course, if everything is relative and no theory has any particular claim to truth or reality, then why should anybody believe deconstructionists? Postmodernism has actually been imported in this country from France, and as philosopher Ted Honderich has remarked, one can think of it as "picking up an idea and running with it, possibly into a nearby brick wall or over a local cliff."

What do we do about all this? Once again, the only available road is the long and tortuous path to education. But it should help knowing what we are dealing with before engaging in battle. Contrary to what a postmodernist might say, Napoleon really did

loose at Waterloo, and it was because of poor intelligence on what the other side was doing.

N. 11, June 2001
God on the highway

"Let's meet at my house Sunday before the game." "Keep using my name in vain, I'll make rush hour longer." "My way is the highway." "You think it's hot here?" "Don't make me come down there." These and other inspiring messages have appeared on many large billboards throughout the United States during the last couple of years. They are all signed "God." I maintain that they are among the most offensive and insensitive signs a driver is forced to look at on our highways, and the people who should be most offended are Christians themselves.

See, as a secular humanist, I can react in two ways to these stern divine admonitions written in large white letters on a stark black background. I can get irritated, in which case I switch the cassette player on to listen to my favorite Kurt Vonnegut novel and have a laugh. Or I can laugh directly at the signs. My favorite one is "We need to talk." I keep looking for God's email or voice mail, but can't find it anywhere.

But a good Christian should be much more disturbed than I am. I should know. I used to be one. Where I grew up, I was told that it is a sin of incredible arrogance to pretend to speak in God's name unless He has directly given authorization to you via personal revelation. To have the gall not only to speak on His behalf, but to actually sign His name, is as bad as falsifying a signature on a cosmic check drawn at the Bank of Infinite Wisdom, and the consequences for the perpetrator of the misdeed might be eternal bad credit.

If I were still a Christian, I would be outraged at this cheap publicity stunt, which is unlikely to lead anybody down the path of eternal salvation or spiritual enlightenment. If I were not a Christian but still believed in some kind of God, I would be doubly offended by the profanity of the advertising campaign and by the fact that the signature at the end is clearly the one of an impostor.

Please understand that I am not calling for a boycott, censorship or legal action. Unfortunately, in this country money can buy you anything, regardless of your lack of taste. If you are powerful enough you can afford to insult anybody and still be admired by a large portion of the public. After all, George W. Bush Jr. insulted his chief opponent for the Presidential elections of 2000, Al Gore, by "accusing" him of being a "point-headed" intellectual. Routinely people who want to sell a product to the American public air commercials in which rather than telling you why their latest creation is so good they waste millions of dollars attempting to depict the competition as a bunch of morons. And now it is time for God to get on the publicity bandwagon. I suppose that if Jesus were alive today he would have to do the rounds of talk shows.

What I am calling for is simply a minimum of self-imposed decency. If you want to believe in whatever supernatural entity tickles your fancy and makes you feel better about what-after all-is a pretty meaningless universe, fine. If you want to brainwash your children into following suit to practice your particular version of nonsense, that is also your right (unless you withdraw medical care from them as a result, in which case

you are culpable of murder). If you wish to witness the glorious power of your particular make and model of god, you have plenty of opportunities to do so. But why is it that you need to force other people into having part in your fantasy world? That is what happens when you put signs on the highway, because people cannot avoid looking at them. That is also what happens when you wish to force a prayer at a graduation ceremony. Have you ever stopped to think that you may have suddenly transformed what was a routine (in the case of driving) or fun (in the case of graduation) activity for everybody into your own special pulpit, with the consequence of unnecessarily making other people feel like outsiders, unwanted, undeserving? Is that really the Christian thing to do?

When you open a "Christian" retail store, have you thought about the fact that immediately a good percentage of your potential clients feel alienated and unwelcome? And incidentally, What Would Jesus Do if He found out that you use His name to sell cheap merchandise for personal profit? I have an idea of what He would do, but you don't need to trust a heathen: just check Matthew 21:11-13 in your own Holy Book to find out.

The problem, of course, is that religion-to be successful and spread-has to be obnoxious, overbearing, always ready to take advantage of any opportunity to make converts or to stigmatize enemies. When it doesn't, as in the case of Judaism, it confines itself to a small group of practitioners, which significantly augments its chances of going extinct. But the practitioners of such aggressive religions need to keep one fundamental distinction in mind: the message is true or false independently of how good your advertising agent is. It is common practice in this country to (probably justly) criticize politicians for governing by opinion polls and spin doctoring. But we don't think this is good. How do you think God is reacting to the continuous twisting of His message in the name of more proselytizing? Are you sure that you shouldn't have a private talk with Him before putting up another sign on the highway?

N. 12, July 2001
The Wedge: what happens if science is taken over by ideology?

By all accounts Phillip Johnson, a law professor at the University of California at Berkeley, is a congenial fellow with whom I'd like to have a beer one of these days. At the same time, he is keen to implement one of the most potentially destructive assaults on science ever consciously planned by a human being. He calls it the "Wedge" strategy, the idea being that there is a natural crack in the edifice of science and that evolution-deniers and other anti-intellectuals only need to widen the initial interstice to eventually bring down the whole evil tree of knowledge.

Johnson published a short version of the wedge idea in his book with the unintentionally ironic title Defeating Darwinism by Opening Minds, and has followed up with another book called The Wedge of Truth. He publishes a weekly update on the Web site of the so-called Center for the Renewal of Science & Culture (CRSC), a mostly conservative Christian think tank consisting of a number of major creationists and intelligent design "theorists."

The "crack" that Johnson thinks is going to be so fatal to science is the very well-known fact that science is based on some (reasonable) philosophical assumptions (such as the existence of a physical reality independent of the observer), and it is therefore not an entirely self-consistent enterprise. I will return to this point in another column because it is too important to treat it in a few words here. What I'd like to discuss instead is what the Wedge strategy is and what would happen if it succeeded. For the first task, I will rely on Johnson's own words and on a document published by the CRSC. Lacking a crystal ball but firmly believing that we do learn from history, I will attempt the second feat by briefly discussing what happened in another occasion in which ideology overcame good science in the recent past.

The Wedge strategy document starts out with predictable rhetoric to the effect that belief in a personal God has been the bedrock of Western civilization, implying that if people should abandon such belief the end of the world would surely follow shortly thereafter. By the same token, of course, slavery was the economic cornerstone of the economy in the southern United States during the first century of its history, but-amazingly-that economy has survived and prospered even without slavery.

The core of the Wedge consists of a detailed program, spanning 20 years, during which efforts will be made to bring about three phases labeled "Scientific research, writing and publication," "Publicity and opinion making," and "Cultural confrontation and renewal." The first phase is apparently already almost over. It took only a few years, no peer-reviewed publication, and a handful of books for intelligent design supporters to claim to have established the truth of their point of view and demolished hundreds of years of painstaking scientific research conducted by tens of thousands of scientists in laboratories world-wide. Kudos to the hyper-efficient fellows of the CRSC. We are now in the midst of the second phase, which interestingly includes such serious attempts at educating the public as engaging talk-show hosts and lobbying dimwit politicians on the evils of materialistic science. Hardly something one would expect from a serious

intellectual think tank, but these are strange times indeed. Most interestingly, the third phase of the Wedge is entitled "cultural confrontation," something that immediately conjures up images of religious wars, and for a good reason: the underlying idea is essentially to turn the United States from a democratic republic into a theocracy dominated by conservative Christian groupthink.

Suppose Johnson and co.-God forbid-will succeed. What will likely happen? Let us turn to a fairly recent example of ideology passed for science, how it came about, and what consequences it brought. In 1940 the leading Russian biologist Nikolai Vavilov was arrested and sent to a concentration camp at Saratov. The reason was that he was denounced by a rising star of the Soviet establishment, Trofim Denisovich Lysenko, an agronomist who had come to believe half-baked ideas about the inheritance of acquired characteristics that had been rejected by mainstream science a century earlier.

Lysenko's wacky ideas fit perfectly well with Stalin's ideology: if the twisted version of dialectical materialism officially endorsed by the Soviet Union was true, then plants and animals (and by extension people) had to be infinitely pliable by changes in their environment and Mendelian genetics and Darwinian evolution must be simply the result of sick capitalist propaganda. Accordingly, Lysenko and his cronies took over Russian genetics and agriculture, exiling or putting to death the best scientists of that country and causing an economic catastrophe that probably didn't help the USSR withstand Western-imposed pressure during the arms race.

Lysenko retained control of Soviet biology well into the 1960s, essentially holding the progress of Russian science in that area to pre-WWII levels. Of course, the rest of the world progressed while in Russia countless lives were ruined, economic opportunities were lost, and huge setbacks in science education afflicted a country in which ideology reigned supreme over reality.

This, I submit, is what would happen in the United States if Johnson and his buddies succeed in implementing the Wedge strategy. It will not be the end of the world, and not even the end of science. There will be a brain drain of scientists and educators (and probably artists) toward more fertile intellectual grounds in other countries, and the good ol' US of A will be left behind and will eventually have to struggle to catch up over a period of decades (unpleasant as it may be, reality does have a way of reminding people of the practical limits of their fantasies). Meanwhile, we will experience the same kind of waste of human potential and economic resources that cursed the USSR under Stalin and Lysenko.

It is somewhat amusing to ponder the symmetry between the two cases: communist and atheist ideology for Lysenko, religious and conservative for Johnson. The real danger does not seem to be either religion or atheism, but blind commitment to an a priori view of the world that ignores how things really are. In fact, if I believed in conspiracy theories, I would be tempted to suggest that the Wedge strategy is a communist plot to have the West experience the same kind of tragedy that the East went through and level the playing field. But I am too busy attempting to insure the failure of Johnson's dangerous campaign to idly speculate on whose orders he may be

following. For all I know he could be a lonely evil genius acting directly on the Devil's orders.

N. 13, August 2001
Frankenfoods vs. the neo-Luddites

Ned Ludd was a man who fought against the change of his time. He saw the industrial revolution and mechanization of the 19th century as a threat to the way of life of many people, and took action to prevent the catastrophe. He failed, of course, but to this day if someone is anti-technology and innovation, she is still likely to be branded a Luddite.

Actually, Ludd is probably a legendary figure. What we do know is that the movement started in 1811 near Liverpool, England, and was directed against the textile machinery that was displaying the local workers. It spread rapidly to other parts of England, but was brutally arrested by a bloody repression. In 1812 a band of Luddites was shot because of the complaints of a factory owner (who was then killed in reprisal), and a trial in 1813 ended in mass hangings. The movement had a second peak in 1816, following the Napoleonic wars, but this time a combination of violent repression and of ensuing better economic times determined its final end.

Yet, at the turn of the 21st century more and more people consider themselves "neo-Luddites": there are alternative music bands by that name, there is a folk opera dedicated to Ned Ludd, and-oddly enough-plenty of Web sites dedicated to Luddism. Even some prominent contemporary writers such as social critic Neil Postman can be counted as exponents of this informal movement.

One of the targets of neo-Luddism is a category of food products that the protesters have dubbed "frankenfoods," with obvious reference to Mary Shelley's 1818 novel (written at the end of the Luddite movement) depicting the catastrophes that ensue when science goes too far in its quest for knowledge. Frankenfoods are, of course, genetically engineered foods, a category that includes a large and increasing variety of both plant and animal products.

The question I wish to briefly discuss is this: what is the most rational approach to the frankenfood controversy as an example of the real or imagined dangers of technology? The answer is obviously not simple, a truism when complex problem are considered.

We can effortlessly dismiss both extreme views on the topic as irrational. On the one hand, there is nothing magical or even unnatural about genetic engineering. Anybody who takes the time to study a bit of molecular biology will easily understand the relatively straightforward (in principle, though not always in practice) technology of recombinant DNA, which is at the base of genetic engineering. As for the naturalness of it all, evolutionary biologists have discovered plenty of natural examples of "horizontal gene transfer" between species. This is the technical term for when a gene that evolved in one organism (let's say a bacterium) is acquired by a different organism (for example another species of bacterium, a plant, or even an animal). Genetic engineering is simply an accelerated (and consciously directed) version of horizontal gene transfer. In that, it does not differ from plenty of other "unnatural" technologies, such as flying above the earth's surface on machines heavier than air, or exploiting the properties of radio waves to talk into a cell phone.

On the other hand, the claim by multinational companies such as Monsanto that genetically engineered foods are absolutely safe is also nonsense. Research in evolutionary biology shows clearly the dramatic effects of horizontal gene transfer on certain organisms (for example, some bacteria can become extremely resistant to antibiotics) and the fact that humanly modified species can interbreed with their natural cousins to produce offspring whose characteristics are impossible to guess. Furthermore, no matter how many tests are carried out on a new genetically engineered product, there is always the possibility that some allergic reaction or other side effect has been neglected and that it will cause disease or even death in a minority of people.

The real question, therefore, is not whether the technology is "good" or "bad," but what is its appropriate use and what kind of safeguards should be put in place to use it. This is why the answer is actually complex. We are now talking about a trade-off between benefits and dangers. I am not referring here to the obvious benefits to the corporations that produce genetically engineered foods. Those are irrelevant from a social point of view. I am speaking of the benefits to farmers and consumers of those products. These range (potentially) from crops that are resistant to pathogens to the availability of a wide variety of foods with interesting properties such as different flavors or unusual time of availability on the market. But are these advantages worth the risk of putting farmers at the mercy of a few and often unscrupulous companies? And what about the possibility-however small-of health risks or environmental damage caused by the new products?

Since there is no yes/no answer to the problem, we are left with the much more thorny issue of estimating probabilities. There is a certain likelihood that a newly released genetically engineered food will become a health hazard. But the same is true for any new drug aimed at fighting a human disease. There is a given probability of environmental impact of the new product, but this is also true for just about any technology we use, with apparently "innocuous" technologies (such as cars) carrying an already demonstrated much higher burden on the deterioration of our environment.

As the rapid demise of the original Luddite movement demonstrated, it is difficult to change the direction of history once certain forces have been set in motion. However, the rational person should still be able to discriminate between the pros and cons of any new development, and such knowledge should be used to inform others and to change things slowly by changing people's vision and habits of thinking.

N. 14, September 2001
The dark side of philosophy

Pizza and philosophy make for a good combination. You might want to try it sometimes. I occasionally have these evenings of food for the brain and the stomach with a few friends, some of them actual philosophers, some simply willing to explore and question whatever topic was chosen for the gathering. These discussions occasionally offer me the launching point for one of these columns, as in the case of the "Red or Blue?" one on the rationality of preferring harsh truths to pleasant lies (Rationally Speaking n. 9, April 2001). Recently our group met again to discuss what one could refer to as "the dark side of philosophy." The starting question is simple: if philosophy is, as the ancient Greeks called it, the "love of wisdom," should we expect practicing philosophers to be—on average—more wise than the layperson?

While the question smacks of intellectualism of the worst sort, it does make sense. After all, we do expect medical doctors to know more about medicine and scientists to know more about the natural world than the average Jane, so why not philosophers? Ah, but of course this is the crux of the problem: does philosophy yield knowledge in a sense comparable to the one that we associate with medicine or science?

While most people would be skeptical of the claim that there is such thing as philosophical knowledge, many philosophers (and some well-informed outsiders) seem convinced that the notion is not entirely ludicrous. For example, it is common to encounter ethicists who believe that not only philosophy as a discipline, but humanity at large have actually made progress in their view of morality, with the current "advanced" notions being virtue ethics (derived from Aristotle), utilitarianism and some neo-Kantian version of deontology ("duty ethics").

Since this is not the focus, but the premise, of this column, let us assume for the time being that in fact philosophy provides at least in some sense knowledge of a variety of subject matters, and let us spotlight ethics in particular. Then we can proceed to ask if philosophers—on average—are more ethical than the rest of us. When I asked the question to my philosopher friends they couldn't avoid a sarcastic smile, as if the answer were clearly negative. Was it just modesty, or can we find factual evidence for this startling result?

If we look at modern biographies of some major philosophers, we do not find much to rejoice. Bertrand Russell was known to write love letters to one mistress immediately after getting out of the bed of another one. Then again, Russell did defend a very liberal conception of love and human relationships, so at least he was not being incoherent. Wittgenstein had a bad temper and once hit a young girl until her nose bled because she didn't understand logic. Such teaching methods would not be condoned today, but Wittgenstein was a logician, not a moral philosopher. Even if one is willing to condemn this sort of actions, this hardly amounts to an indictment of the teachings of philosophy, not any more than discovering that your doctor smokes or eats triple cheeseburgers can be used as an excuse for dismissing his counsel on diet.

And yet there is worse. Examples of philosophers who have broken friendships over ideological differences (like Camus and Sartre), or actively supported evil political systems (like Heidegger and Nazism) are not that difficult to find. On the other hand, it is also true that these cases certainly do not characterize the profession as a whole, and that surely equally misguided choices can be abundantly found among non philosophers. Furthermore, counter-examples of virtuous (or at least coherent) philosophers are also not rare. In modern times, the behavior of ethicist Peter Singer comes to mind. Singer is one of the founding fathers of the animal liberation movement and, accordingly, is a vegetarian. He also maintains that we are ethically bound to share our wealth with the less fortunate, and puts his money were his mouth is by giving away to charities 30% of his academic salary. I am not suggesting that Singer's ideas are to be embraced wholesale, but surely he cannot be accused of not trying to live by his own philosophy. Indeed, the philosopher par excellence, Socrates, died at the hand of the Athenian state in order to remain coherent with his view of justice. It would certainly be interesting to conduct a sociological study among philosophers to see how many actually try to put into practice their own teachings or those ideas that they consider as the best that philosophical inquiry has afforded humanity.

The real dark side of philosophy, as is the case for science, is largely outside the control of philosophers (or scientists). I am referring to the inappropriate use that ideologues and demagogues make of philosophical doctrines (or scientific discoveries) largely, though not necessarily entirely, without the help of the philosophers themselves. Perhaps the best example is the association between the Nazi political movement and the German philosopher Friedrich Nietzsche. While the latter's ideas about individualism and the power of the "super man" may hint at a superficial relationship with Hitler's madness, it turns out that even a cursory reading of the philosopher shows that he was adamantly opposed to militarism, nationalism and dictatorships—nothing could be further from the structure of the Third Reich.

Along similar lines, of course, it is common knowledge that most prominent communists have been more Marxists than Marx (just as some evolutionary biologists are more Darwinists than Darwin). Very few philosophers have ever attempted to translate their theories into political realities, Aristotle's nurturing of the young Alexander the Great and Plato's plans of influencing the tyrant of Syracuse being among the scarce examples, and little or no harm has ever derived from such utopian attempts.

If there is a dark side to philosophy, therefore, it is the same dark side of science and possibly of other human endeavors: it consists in the misappropriation by shrewd politicians of whatever can help their own aims, and in the fact that the rest of us let them get away with it for some time out of ignorance and apathy. That is why it is so important for everybody to learn about philosophy and science: their consequences are too grave for being left in the hands of the experts or in those of the dishonest.

N. 15, September 2001 - Special edition
Of terror and insanity (on 9/1/01)

"In the City of God there will be a great thunder, Two brothers torn apart by Chaos, while the fortress endures, the great leader will succumb, The third big war will begin when the big city is burning" - Nostradamus 1654

I can only hope that this horrible hoax, because that is what this alleged quatrain from the "prophet" Nostradamus is, was perpetrated accidentally and not by somebody taking advantage of or poking fun at the human tragedy that hit the United States on September 11, 2001. Several other similar verses were released over the Internet, and self-styled Nostradamus "expert" John Hogue immediately took to the media for a special appearance on the Art Bell show commenting on what Nostradamus "really" predicted. To decrease my faith in humankind even further, my wife came home the other day from her job at the public library telling me that all the books on Nostradamus are gone and the public still calls for more.

It shouldn't take a course in critical thinking to realize that the suspicious thing about prophecies (even those that are not actually written after the fact) is that we realize what they were predicting only after the events. Hindsight is 20/20, as they say, but one could reasonably ask what is the point of a prophecy that can only be understood when it's too late. The interpretation of a single prophecy always depends upon what time the interpretation is taking place, as the vague poetic lines are stretched and cut to fit whatever has just happened or what seems likely to happen. So, rather than coming to the true understanding of a prophecy, what we're really doing is making it up out of thin air, just as the prophet did originally.

What good are psychics if they can't warn of specific, imminent danger? For example, multimillionaire mind- and future-reader Sylvia Browne was on CNN's Larry King Live just a few days before the terrorist attack. She wasted her talent warning skeptic James Randi that he had something wrong in his left ventricle (Randi is in good health, but it is also a good bet that an elderly white American male will eventually have something wrong with his heart) instead of warning everybody on live national TV of what was about to happen. It was her chance to prove herself, and she blew it.

Of course, the true believer always has a ready answer: the point of the prophecy is to make you realize the power of mystical and religious inspiration, annihilate your pride in reason and open your heart to God, not merely to save human lives.

And speaking of God, rabid Christian fundamentalist Jerry Falwell was also out for publicity immediately after the tragedy. Was he praying for the victims and offering spiritual guidance to the rest of the nation? No, he was busy explaining why this all happened. According to this monster the reason all those people died was twofold: First, evil exists (an observation about which one can hardly disagree, although definitions of evil differ) and, second, God has lifted his umbrella of protection and allowed the tragedy to occur. Apparently, God lifted his protection because of too much

secularism, not allowing kids to pray or read the Bible in school (which is not true), and allowing porn on the Web.

These statements are so outrageously stupid and offensive to the memory of the people who died that you would expect them to be immediately chastised by any reasonable Christian who was listening to Falwell's show. Alas, millions of people are hooked on the words of a man whose worldview is similar to that of the fringe religionists who rejoiced at the attack. It is frighteningly easy to imagine someone prone to Falwell's thinking style becoming someone like bin Laden under different historical circumstances. Falwell, after all, does want to turn the United States into the Christian equivalent of Taliban Afghanistan.

This morning I was riding the bus to work and they were broadcasting a local radio talk show where people were understandably upset at the events of the previous days and were trying to come to grips with the surreal situation. I imagine most of the callers had spent the previous Tuesday in a state of mind similar to my own, shocked by the news, unable to fully comprehend the scope of the tragedy or the sickness of the minds that planned it and carried it out in cold blood. But of course most of the callers to the show went immediately beyond the specific event to further-consciously or not-their religious agenda. A typical comment was "we need to turn this nation to God."

Well, wake up people, this nation is turned to God. Constantly. God is all over this nation, from the now ubiquitous signs on our highways to the highest number and density of churches that ever occurred not only in the US but probably in any other time or place in the world. Over 95% of the citizens of the US profess belief in a personal God, and about half of them hold onto at least some of the most fundamentalist views espoused by the innumerable sects that have developed at an incredible pace over the last century. Why would God "lift his umbrella" from one of the most adoring places on the whole planet?

More importantly, what kind of a horrible God allows thousands of innocent people to be wiped out in an instant just because somebody posts pornographic pictures on the Internet? Ah, but I forgot that this is the same sort of God that told the Jews to exterminate entire races because they didn't please Him enough, and added that they should slaughter their enemies' children and-for good measure-rape their wives (see Genesis 34:13-29, Exodus 17:13, 32:27-29, Numbers 16:27-33, 21:35, 31:17-28, Deuteronomy 2:33-34, 3:6, 7:2, 20:13-14, and the list can go on and on). Is this the sort of God that our nation should turn toward? I suggest instead that we try to nuke Him if we can find where in the Hell He hides!

As the reader can see, this is an angry column. I rarely allow myself this sort of unbridled frankness, but too much is too much even for somebody attempting to style his life after the moderate advise of Epicurus. These people must be stopped, and I'm not talking only about the Islamic fundamentalists, but about any sort of fundamentalist-religious or not-who thinks he's got the answer to all the world's problems, if only the world would submit to his iron-fisted rule. It is time for all people of good will and good sense to say: Enough!

N. 16, October 2001
Heart disease and the myth of personal responsibility

When I say “heart attack” what are your first thoughts in terms of causes? A good bet is that you will consider cholesterol levels, and immediately after that, diet. After a bit more thought, you might want to add stress induced by a job with too much pressure and responsibility, and finally—just maybe—you will consider the possibility of a genetic predisposition. These are all the causes we hear from the media are associated with heart disease, and indubitably there is a lot of research to back these claims up.

However, and most astoundingly, research available since the 1960s and repeated several times since, also shows that all the above factors are actually minor causes of heart disease. The best single predictor of heart problems is indeed stress, but of an entirely different and still widely ignored type: the stress that comes not from doing too much or being under self-imposed pressure, but from being ordered around with little or no control over your destiny.

A study conducted among 17,000 British civil servants (and before that on a million employees of Bell Telephones in the 1960s) clearly shows that the status of a person’s job is the most reliable predictor of heart attack, more than obesity, smoking or high blood pressure (though these count as well, so don’t rush to get that triple cheeseburger just yet). High cholesterol is also a risk factor, but only in people that are genetically predisposed to it. It seems that your heart is by and large at the mercy of the size of your pay check.

The studies linking the pecking order on the job with heart problems found that what happens is that being ordered around diminishes your sense of control over your life, which causes stress mediated by the release of the hormone cortisol. High levels of cortisol not only create problems for your coronary arteries, but depress your immune response, so that you are also more likely to fall prey to an infection—which is not helped by the fact that the rise in cortisol is accompanied by a decrease in serotonin, meaning that you don’t sleep very well and you never feel rested.

Privatization can do that to you too. A follow up study on British civil servants explored how they were coping with the new 1990s concept of no job security. Suddenly, these people could loose their jobs for reasons that had nothing to do with their performance and all to do with the capricious oscillations of the market economy. Predictably, the employees in question felt no control over their source of livelihood, which caused stress and eventually illness—all of which had little to do with diet, drinking and smoking.

Researchers have been able to explode another myth related to heart attacks: the idea that it is a disease of the rich, suffered by CEOs because of the high pressure they experience on their job for prolonged periods of time and the associated responsibilities of such a situation. Well, if you are a CEO and are planning on using that as an excuse to raise your bonus this year, forget it. While there are exceptions, the heart attack rate in this category is actually much lower than the population at large, presumably

because these people are actually very much in control of what they are doing, since they are everybody else's boss (and even when they "fail" they get to retire with a few extra million dollars in their bank accounts). This category becomes at risk—rather ironically—only after retirement, possibly because their new "relaxed" life style is actually associated with very little control. Taking it easy for someone used to issue orders and be in charge can be fatal, literally.

Human beings are primates, and evolutionary theory teaches us to expect something similar in our inter-specific cousins. Sure enough, studies on baboons have shown an increase in stress level and production of cortisol in males that join a new troop, because when they do so they find themselves at the bottom of the pecking order, with little control over availability of food and mates. The same is true for monkeys studied in zoos, where researchers found a nice inverse relationship between pecking order and the furring up of arties. Next time you see a monkey or ape, remember to empathize with their working conditions.

Amazingly, you can even demonstrate the effect experimentally on humans by dividing people into two groups, giving them the same tasks, but ordering around one group and empowering the other with self decision making. The latter group experiences lower levels of stress hormones, blood pressure and heart rate.

What are we to learn from all this? For one thing it is interesting that we are experiencing a continuous pressure in modern society to "take responsibility," follow a healthy life style, control our diet, watch closely what sorts of habits and addictions we develop, or else. While this is all good advice in general, why don't we ever hear that the single most important factor affecting our health is the lack of control over our lives that modern society forces upon us? I am no neo-luddite (see my August 2001 column), but shouldn't we question the social order at the least to the extent that it makes us unhappy and possibly kills us?

I am not of course suggesting that we are experiencing a "great media conspiracy" to blame us instead of the system. The danger is a lot more subtle than that since the facts are out there for anybody to check, if they only bother to. What started me on this was reading a summary of what I have discussed in the widely available volume by Matt Ridley, Genome. Then again, no newspapers, TV news, or talk show picks up on this sort of information, disseminates it to the public, and raises awareness. The reason is probably that questioning the system and lifting the blame from the individual goes directly against an entrenched aspect of the American psyche, it challenges the basic assumption of individualism and "opportunity" for everybody that this country is all about. Well, at least once in your life it is healthy to question even the most fundamental assumptions. Go for it, it might hurt less than you think.

N. 17, November 2001a
Beer and circus in American education, part I

Francis Bacon wrote in 1620 that any fair criticism has to have two parts: a pars destruens, where one attacks, and a pars construens, where one advances constructive suggestions. This month, Rationally Speaking readers will therefore receive a two-part column in the spirit of Bacon. What I wish to tear down is the myth that large universities can impart a decent undergraduate education. The charge against the sham that is undergraduate education in the United States today has perhaps never been as effective as in a book entitled Beer and Circus: How Big Time College Sports is Crippling Undergraduate Education, by Murray Sperber. Sperber is a professor of English who has studied the phenomenon of college athletics for years, and who received death threats and was unable to teach or receive students in his office at Indiana University because he dared speak out against the degrading behavior of then basketball coach Bobby Knight (who, among other things, threw chairs at and choked some of his athletes).

Sperber started with the common observation that there is a very strong inverse relationship between excellence in undergraduate education and performance in athletics among American schools. More specifically, and almost without exception, schools that belong to the NCAA Division I football or basketball programs are among the worst in the nation in undergraduate education, while Division III schools tend to be the best.

The correlation is attributable to a vicious triangle involving athletics, the party scene, and the excessive emphasis on graduate training and research at most of these schools. At what Sperber calls “big time U’s,” one of the major attractions for students is provided by the party scene, not the possibility of academic achievement. A significant percentage of undergraduates spend more time partying (typically from Thursday afternoon until the end of the weekend) than holding part-time jobs or studying. If drinking is not allowed on campus, a vibrant bar scene exists just outside of it, and the fraternities of the “Greek” system are at the very center of it all. Schools are ranked nationally for their opportunities to party, and what is the best excuse for revelry for most of our undergraduates? But the football or basketball game, of course! And schools themselves, together with the NCAA, encourage and directly profit from this situation by allowing beer ads to run during broadcast time when their team is playing.

The morale of the faculty is not helped by seeing semi-literate coaches getting huge salaries and bonuses, and barely academically proficient athletes being glorified to the point of naming campus streets after them. A few years ago a chemistry professor working at the University of Colorado won the Nobel Prize, which was big news for the school, since it was their first faculty to achieve that honor. At the press conference, a journalist asked the professor what he would like to ask of the President of the university, who was sitting smiling nearby. The professor said he would like to have the same salary as the football coach, at which the President smile faded and an embarrassed “Now, c’mon, let’s be serious” comment was heard over the microphone.

Big time U's are also scams because, while claiming to aim for academic excellence, they in fact admit almost every applicant in a never-ending quest for more students, and therefore for more funds, even though many students seriously need remedial courses and are crammed into huge classrooms where they need a pair of binoculars to see the instructor. Interestingly, since the 1980s, higher education officials have been referring to students as "customers," an image that brings to mind car salesmen and giant malls, rather than an environment conducive to education.

To add insult to injury, big time U's trumpet their honors programs as examples of the excellent care that students get, with state-of-the-art computer labs, one-on-one research experiences with faculty, and small classes based on inquiry and discussion, rather than passive lecture formats. Yes, the honors program students do get exactly what every undergraduate student should demand of their school, but of course they are the exception—not a model, but only a smokescreen to maintain a façade of high quality. And how could tens of thousands of students get a decent education when the student/faculty ratio is so abysmal, when State legislatures keep cutting the alleged "fat," and when school administrators put their effort into building newer sports facilities and recruiting better athletes with a reckless disregard for academic standards?

The so-called "student" athletes themselves, of course, are not much better off. They work almost full time like professional athletes for essentially no pay (all the money goes to the coaches and the athletic departments), and in the process cannot get an education worth a dime. And so few of them make it to professional teams that their chances are not much better than winning the lottery (not to mention, of course, the always-present possibility of injuries).

Another component of the fraud is the myth of the 'good researcher = good teacher' mantra that big time U's keep propagating. While there are indeed some faculty who excel at both activities, there isn't a single study that supports the naïve assumption that if one is adept at running a research lab (and at getting the large sums of extramural funding that administrations are really after) he is also capable of teaching. Furthermore, most of our faculty justly recoil in horror from the idea of "teaching" large introductory classes where it is next to impossible to motivate students, let alone establish a meaningful relationship with them. The result is that such crucially formative classes are farmed out to temporary instructors or graduate students, most of whom are inexperienced, paid very little, and are abysmally unskilled at teaching.

Large public universities are becoming big businesses whose mission is to make enough money to survive, keep losing their best faculty because of the conditions under which they are forced to work, turn to professional business consultants instead of educators to decide what to do next, and rely on the beer and circus atmosphere to prop up the pathetic state of their undergraduate education. Enough said for the pars destruens. Now, what are we to do about all this? The solution, as we shall see, is astonishingly simple.

N. 18, November 2001b
Beer and circus in American education, part II

Since I just attacked undergraduate education at big-time sports universities in the United States, a fair question is: what could be done to solve the problem? My answers are an elaboration on those suggested by Murray Sperber in his Beer and Circus and those outlined in a highly influential report on what works and doesn't work in American colleges, known as the Boyer Commission report.

Modest proposal 1: Big-time U's should slim down by thousands of undergraduates until the student body is of a size that can be handled by the faculty. The only other alternative is to increase the size of the faculty by an order of magnitude, which is much more inconceivable.

Modest proposal 2: Universities should separate undergraduate teaching from the graduate training and research activities. Here I part company with Sperber in that I do not propose having a few universities devoted exclusively to research and many more to undergraduate education, though that is certainly a viable model. But it is time to stop hiring faculty on the pretense that they be good teachers when everyone knows that they are tenured and promoted because of their research and in spite of their teaching. Let's hire good teachers to do the teaching and good researchers to do the research. If a few individuals can do both, so much the better.

Modest proposal 3: Hire at least some faculty whose research is in pedagogy. It is astounding that a lot is known about how the brain learns, and on what works and doesn't work in teaching, but that most faculty and teaching assistants are wholly ignorant of this field of work. Having at least a few colleagues who know what they are doing might actually help.

Modest proposal 4: Abolish passive teaching methods that turn undergraduates into zombies: no more lectures (with or without PowerPoint™) and increased emphasis on inquiry-based learning, small class discussions, open-ended research projects and the like.

Modest proposal 5: Raise the standards of acceptance into four-year colleges: require a minimum (high) score on the Scholastic Aptitude Test or equivalent exam. Despite the fact that standardized tests have their limitations, scores on college entrance exams actually correlate much better than grades with students' abilities at critical thinking because of rampant grade inflation. We need to acknowledge that while equal opportunity to go college is a right, acceptance into university must be based on readiness. Community colleges exist to bridge the gap for those whose performance indicates that they would not be best served by the university experience.

Modest proposal 6: End athletic scholarships. They encourage the exploitation of athletes, cause resentment among other undergraduates who had to work harder to get where they are, and in general defeat the whole point of a "scholar"-ship. It is not by

chance that the Ivy League universities do not award athletic scholarships and prohibit their teams from playing bowl games.

Modest proposal 7: Shut down the NCAA. We don't need an organization whose only purpose is to exploit youths through the encouragement of a beer and circus atmosphere (March "madness" comes to mind as an example) and that does absolutely nothing to further the only legitimate goal of a university: providing the best education possible. Playing sports is a great thing and should be pursued at colleges, but intramurally as a recreational activity and extramurally only as a relaxed pastime to which no high stakes are attached. Let the professional teams pay to raise their future stars, as in every other civilized country in the world (did you realize that in 2000 the NCAA was looking at allowing athletes to seek loans based on future professional earnings? Do these people have no shame?).

Modest proposal 8: Treat coaches as regular faculty, with tenure track and salaries comparable to those of any other faculty in any other discipline. And tell them they are lucky to get that much, given that their job is far less important than the one done by the rest of the faculty.

Modest proposal 9: Educate university administrators that the university is not a for-profit business, it is a community service. Ergo, it makes no sense at all to call in business marketers to improve the school's image or to devise strategies to increase the "customer" base, while the true needs of students (and, by extension, their future employers) go unmet. Schools that provide a good education don't need to present a spin-doctored façade.

Modest proposal 10: Vote only for legislators who pledge to provide acceptable levels of State funding of education at all levels, including college. Education, together with health care, is among the most important rights that Americans still have to fight for, which are taken for granted in other industrialized countries.

Is all of this going to happen? Probably not, unless the current demographics and economics change significantly, or a grass-roots movement takes hold to really take our schools back. I give it a chance in a thousand, which is not much worse than the likelihood of getting a good education at a big-time U anyway. Think about it.

N. 19, December 2001
The Great Unicorn Debate

“I will give you one hundred dollars if you can demonstrate that there is no such thing as an immaterial unicorn in this room.” When I said that to my class of Honors students engaged in a course on science and pseudoscience, they looked at me in disbelief. I suspect that the incredulity wasn’t generated by the obvious impossibility of the task at hand, but by the idea that their professor would put a hundred bucks of his own money on the table to prove a point. So started the great unicorn debate which lasted for several weeks, until the intellectual energy of the participants was exhausted.

The first attempts at solving the problem were generated simply by a misunderstanding of the question: one of the students claimed it was really a straightforward matter; just flood the room and the body of the unicorn would displace a certain volume of water, which would reveal the presence or demonstrate the absence of the beast (apparently, ethical concerns about the possibility of drowning the unicorn did not enter in the proposal). “I said ‘immaterial’, not ‘invisible,’” I remarked. Water, as everyone knows, just goes through an immaterial body without being displaced. “Oh!” Successive attempts were crafted more carefully.

A particularly clever effort—which clearly got the point of the exercise—was: “There are no immaterial unicorns in our classroom, because in our classroom exists an atmospheric condition, undetectable by any tools we might have today, that causes immaterial unicorns to materialize, thereby making them visible to the naked eye.” Talk about beating you at your own game. But I wasn’t about to let my hundred bucks go that easily. I replied that the person in question obviously did not understand the mysteries of unicornism, or she would realize the foolishness of such an attempt.

Another student came up with a more challenging philosophical solution to the problem. It went like this:

Fact one: Immaterial is defined as the absence of matter.

Fact two: Matter cannot be created or destroyed.

Conclusion One: Something that is immaterial cannot be created or destroyed.

Fact three: Thought exists only as something immaterial.

Fact four: Thought exists only in one's own mind.

Conclusion Two: Something immaterial exists only in one's own mind.

Conclusion Three: The presence of something immaterial can be created or destroyed only in one's mind.

Conclusion Four: The creation or destruction of something immaterial in one's own mind is determined by belief.

Final Conclusion: There is not an invisible, immaterial unicorn if one does not believe it in her own mind.

Darn! I wish more theologians displayed such a keen sense of reasoning.

Yet, this still wasn't good enough, and I asked the whole class to go through the proposed proof, pick it apart, and see where the flaws were. Sure enough, half an hour of discussion revealed several problems.

First, modern physics no longer maintains that matter cannot be created or destroyed. In fact, according to quantum mechanics, such processes go on all the time. The only reason we normally don't detect them is because they are very fast and balance each other perfectly, so we don't expect a chair to suddenly appear from or disappear into nothingness. (Although, according to superstring theory, this sort of quantum fluctuation may have been responsible for the origin of the universe, which would have literally popped into existence from nowhere. Spooky.)

Second, who said that thought is immaterial? Some leftover Cartesian dualists might still think that, but in the 21st century it is becoming more acceptable to consider thought an aspect of very physical activities going on inside one's brain. Indeed, we can now measure which parts of the brain are involved in which sort of thinking and even feelings. This doesn't mean that we have a full understanding of what thought is. Far from it. But the chances that it will turn out to be immaterial (in the sense of not depending on matter) are pretty slim.

Mind you, I completely agree with the final conclusion: there is no immaterial unicorn unless one believes in it in his own mind. But the only justification I (or anybody else, as far as I know) can give for such conclusion is my own intuition.

The same student also presented another clever argument, this one based on the laws of physics. She correctly maintained that an immaterial unicorn could not be affected by or take advantage of the laws of physics, by the definition of being immaterial. Therefore, we should think of the unicorn rather as an immaterial point with no extension (pace Euclid). Such an immaterial point could not stay in the room because the room itself—along with the earth and the whole solar system—is moving fast through space. The core of this demonstration depends on Descartes' own intuition of the trouble he got himself into by proposing a dualistic conception of the human body: if the mind is not corporeal, how does it affect the body? Descartes "solved" the problem by positing that the pineal gland was the seat of the soul. But, as every philosopher since him has immediately realized, just because you make the point of contact between material and immaterial as small as possible (the pineal gland is the smallest gland in the endocrine system), the paradox of an immaterial entity acting on matter (or vice versa) doesn't go away. Indeed, that is what's so unbelievable about ghosts, ectoplasms and out of body experiences: if you are out of your body, how do you

manage to see yourself lying in bed? With whose eyes? What brain is there to process the visual signal? And, given that your sense of self depends on having a properly functioning brain, who is you, when you are out of the body?

But of course, in order to save my money, all I had to reply was that—once again—the mysteries of unicornism tells me that not only the immaterial unicorn is not a point; it also stays in the room with no trouble, it's a male, five feet tall and of white color (how do I know that it is white if it is immaterial and invisible? Well, you should know by now: it's a mystery…).
By the end of the day, my students agreed that there was no way to demonstrate the inexistence of the phantom-like unicorn. After having secured my hundred bucks, I then asked if they believed in the existence of the unicorn, nonetheless. There was a unanimous negative response. "Why?" I asked affecting surprise. "Because it's silly to believe in something for which there is no evidence," was the equally bewildered response. After a few seconds, somebody asked: "Then what's the difference with belief in god?" But class time was over, and I left them to discuss theology with the satisfaction of a job well done.

N. 20, January 2002
Mr. Bayes and the true nature of scientific hypotheses

How does science work, really? You can read all about it in plenty of texts in philosophy of science, but if you have ever experienced the making of science on an everyday basis, chances are you will feel dissatisfied with the airtight account given by philosophers. Too neat, not enough mess.

To be sure, I am not denying the existence of the scientific method(s), as radical philosopher Paul Feyerabend is infamously known for having done. But I know from personal experience that scientists don't spend their time trying to falsify hypotheses, as Karl Popper wished they did. By the same token, while occasionally particular scientific fields do undergo periods of upheaval, Thomas Kuhn's distinction between "normal science" and scientific "revolutions" is too simple. Was the neo-Darwinian synthesis of the 1930s and 40s in evolutionary biology a revolution or just a significant adjustment? Was Eldredge and Gould's theory of "punctuated equilibria" to explain certain features of the fossil record a blip on the screen or, at least, a minor revolution?

But, perhaps, the least convincing feature of the scientific method is not something theorized by philosophers, but something actually practiced by almost every scientist, especially those involved in heavily statistical disciplines such as organismal biology and the social sciences. Whenever we run an experiment, we analyze the data in a way to verify if the so-called "null hypothesis" has been successfully rejected. If so, we open a bottle of champagne and proceed to write up the results to place a new small brick in the edifice of knowledge.

Let me explain. A null hypothesis is what would happen if nothing happened. Suppose you are testing the effect of a new drug on the remission of breast cancer. Your null hypothesis is that the drug has no effect: within a properly controlled experimental population, the subjects receiving the drug do not show a statistically significant difference in their remission rate when compared to those who did not receive the drug. If you can reject the null, this is great news: the drug is working, and you have made a potentially important contribution toward bettering humanity's welfare. Or have you?

The problem is that the whole idea of a null hypothesis, introduced in statistics by none other than Sir Ronald Fisher (the father of much modern statistical analyses), constraints our questions to 'yes' and 'no' answers. Nature is much too subtle for that. We probably had a pretty good idea, before we even started the experiment, that the null hypothesis was going to be rejected. After all, surely we don't embark in costly (both in terms of material resources and of human potential) experiments just on the whim of the moment. We don't randomly test all possible chemical substances for their role as potential anti-carcinogens. What we really want to know is if the new drug performed better than other, already known, ones—and by how much. That is, every time we run an experiment we have two factors that Fisherian (also known as "frequentist," see below) statistics does not take into account: first, we have a priori expectations about the outcome of the experiments, i.e., we don't enter the trial as a blank slate (contrary to what is assumed by most statistical tests); second, we normally

compare more than two hypotheses (often several), and the least interesting of them is the null one.

An increasing number of statisticians and scientists are beginning to realize this, and are ironically turning to a solution that was devises, and widely used, well before Fisher. That solution was contained in an obscure paper that one Reverend Thomas Bayes published back in 1763, and is revolutionizing how scientists do their work, as well as how philosophers think about science.

Bayesian statistics simply acknowledges that what we are really after is an estimate of the probability of a certain hypothesis to be true, given what we know before running an experiment, as well as what we learn from the experiment itself. Indeed, a simple formula known as Bayes theorem says that the probability that a hypothesis (among many) is correct, given the available data, depends on the probability that the data would be observed if that hypothesis were true, multiplied by the a priori probability (i.e., based on previous experience) that the hypothesis is true.

In Fisherian terms, the probability of an event is the frequency with which that event would occur given certain circumstances (hence the term “frequentist” to identify this classical approach). For example, the probability of rolling a three with one (unloaded) die is 1/6, because there are six possible, equiprobable outcomes, and on average (i.e., on long enough runs) you will get a three one time every six.

In Bayesian terms, however, a probability is really an estimate of the degree of belief (as in confidence, not blind faith) that a researcher can put into a particular hypothesis, given all she knows about the problem at hand. Your degree of belief that threes come out once every six rolls of the die comes from both a priori considerations about fair dice, and the empirical fact that you have observed this sort of events in the past. However, should you witness a repeated specified outcome over and over, your degree of belief in the hypothesis of a fair die would keep going down until you strongly suspect foul play. It makes intuitive sense that the degree of confidence in a hypothesis changes with the available evidence, and one can think of different scientific hypotheses as competing for the highest degree of Bayesian probability. New experiments will lower our confidence in some hypotheses, and increase the one in others. Importantly, we might never be able to settle on one final hypothesis, because the data may be roughly equally compatible with several alternatives (a frustrating situation very familiar to any scientist and known in philosophy as the underdetermination of hypotheses by the data).

You can see why a Bayesian description of the scientific enterprise—while not devoid of problems and critics—is revealing itself to be a tantalizing tool for both scientists, in their everyday practice, and for philosophers, as a more realistic way of thinking about science as a process.

Perhaps more importantly, Bayesian analyses are allowing researchers to save money and human lives during clinical trials because they permit the researcher to constantly re-evaluate the likelihood of different hypotheses during the experiment. If we don’t

have to wait for a long and costly clinical trial to be over before realizing that, say, two of the six drugs being tested are, in fact, significantly better than the others, Reverend Bayes might turn out to be a much more important figure in science than anybody has imagined over the last two centuries.

N. 21, February 2002
Is philosophy useless?

If you mention philosophy at a party you are most likely to be greeted by rolling eyes, complacent smiles or embarrassed silence. Philosophy just isn't considered a good topic for conversation, let alone for serious consideration in everyone's daily life. This wasn't always the case. On the contrary: philosophy, as we understand it today, was born in ancient Greece as a tool to improve one's life, especially from an ethical perspective, and to find meaning and purpose in it. Today, so few people understand philosophy that most use meaning and purpose as synonyms, without realizing the difference.

Let me try to explain. Suppose you enter a restaurant and are given a menu to pore over. The purpose of that menu is to make it possible for you to eat at the place. The meaning of the menu is to present you with a series of choices to fulfill that purpose. If you don't understand the language in which the menu is written, the menu has purpose but no meaning. If the menu is made of pictures of the food items available and you start to eat the menu, you are confusing purpose with meaning! You get the point.

One of the complaints that pundits of all stripes most often make about modern life is that it has become meaningless and without purpose (though they seldom make the distinction between the two), that ethics has become a luxury, is based on outdated and difficult to defend theologies, or has been drowned by rampant relativism that makes Cole Porter's "Anything Goes" sound like an ironic prophecy.

So, why not resort to philosophy? After all, we have the accumulated thought of 2400 years or more of cogitation about the deep questions of life, explored by some of the sharpest minds of the Western and Eastern traditions. What's stopping us from dipping into this treasure and make philosophy work for us again?

Despite its general reputation for obscurity or irrelevance, philosophy is making a comeback. The American Philosophical Association has decided to celebrate its first centenary this year by promoting a series of activities geared toward the general public, including a series of radio shows featuring brief philosophical discussions. Furthermore, the United States has recently imported from Europe two potentially important new ways to bring philosophy out of academia and back to the people: philosophical cafés and philosophical counseling.

Philosophical cafés are open-ended discussions based on the ancient Socratic idea that asking questions is the best way to learn about a subject. In the United States, there is a Society for Philosophical Inquiry which helps people setting up cafés. The presence of an actual philosopher is a plus (you can get one on loan from the local University), but it is not deemed necessary. What is required is the willingness to openly question and discuss just about anything. No sacred cows allowed.

Philosophical counseling has also been pioneered in the old continent and is now slowly spreading in the US. The idea is to offer an alternative (which can be

complementary) to traditional psychological counseling. After all, some people have emotional problems rooted in their past, but most of us simply don't know how to tackle immediate problems or crucial junctures in our lives, and considering the broad picture, i.e. approaching the problem philosophically, might help.

Philosophical counseling is currently controversial, with professional philosophers as divided on the topic as professional psychologists were at the beginning of the psychological counseling phenomenon. According to the American Philosophical Practitioners Association, the role of a counselor is what Socrates advocated in ancient Athens: to be a sort of philosophical midwife, to help people understand that they do have a philosophy, but that they usually don't think about it and don't attempt to articulate it so that they can examine it and decide if that's the sort of perspective on life they really wish to maintain. Critics accuse philosophical counselors of being sophists ready to sell their services for vile money (as if University professors don't actually get paid, albeit little), but that's a different discussion.

No matter how it is delivered, philosophy should be relevant to everyone simply because we tend not to do much thinking about problems small and large, and thinking is—allegedly—what distinguishes us from the rest of the animal world. The problem can be a major ethical dilemma or a relatively minor inconvenience. It may deal with what to do if one of your parents is physically incapacitated but mentally alert, or it may be spurred by a coworkers' complaint about your taste in decorating your office (these are both actual cases from the philosophical counseling literature). Either way, it does help to discuss your views with other people, and to learn what thinkers from Socrates to Peter Singer have thought about similar problems or situations. Really, the choice is not to do without philosophy altogether, only to carefully examine the philosophy you do have or to be ignorant of your own perspective on life.

N. 22, March 2002
Darwin's what?

In 1859 the world got a piece of shocking news: it seems that not only is the earth not the center of the universe, as Copernicus and Galilei had amply demonstrated, but that human beings are not the pinnacle of creation after all. This devastating blow to our self-esteem-the second in three centuries-was dealt by Charles Darwin, a quiet Englishman who had made his lifelong activity the understanding of the natural variation of living organisms. As is well known, the publication of his On the Origin of Species caused quite a stir in academic circles and among the general public. The first kind of controversy (the scientific one) lasted only a few decades: by the turn of the 20th century the theory of descent with modification (as Darwin called it), or evolution (as we now refer to it), was as solidly established as general relativity or the theory of gases.

Not so for the second sort of controversy: while the general public in most European countries does not consider the notion that we are closely related to chimps and monkeys particularly outrageous anymore, a vocal minority in the United States refuses the very idea on ideological grounds: it's not in the Bible, so it can't be. How can this bizarre state of affairs persist into the 21st century? To a scientist, this seems as incredible as somebody seriously defending the theory that the earth is flat (which a few people belonging to the Flat Earth Society in California actually do!). Scientists are not in the business of questioning people's religious beliefs, but they are also paid to teach the best of what we have good reasons to think we know, leaving individuals to make decisions on how to reconcile the discoveries of science with their own religious views.

It is this disconnect-between what scientists accept as established beyond reasonable doubt and what a sizable portion of the American public believes-that has prompted the annual celebration of "Darwin Day," which just occurred on February 12 (that is, on Darwin's-as well as Lincoln's-birthday). Darwin Day is an international effort, mostly focused on the United States with a few outlets in Canada and Europe, to encourage the public to learn about evolutionary biology and to prompt scientists to get out of their ivory towers for at least a few hours and talk to the people who, after all, pay their salaries and research grants. Surely this sort of communication between experts and lay people can't be a bad idea.

Darwin Day was actually started in 1996 at the University of Tennessee as the result of a reaction to the silliness of a bill then being considered by the state legislature and which would have curtailed the teaching of evolution in Tennessee's public schools. A group of students and faculty of the then recently created Department of Ecology and Evolutionary Biology was discussing the situation over a beer (at a several-times-since-defunct brewery on Gay Street in Knoxville, TN) and decided to create a group whose mission would be to dispel the so many myths and misunderstandings about evolution and Darwinism that periodically fuel such misguided legislative attempts as the 1996 Tennessee Senate bill n. 3229. (The bill fortunately died in committee, although it generated enough negative publicity that the BBC did a special show on the controversy). So was born the Tennessee Darwin Coalition.

Just in case you'd like to start your own Darwin Day for 2003, let me tell you what we did in Tennessee this year. The events started on February 11 with a workshop for local junior and high school teachers on how to use evolution as an example of critical thinking. Imagine! The idea is that it would be much better for students to learn about the process of science and how certain conclusions (e.g., that we did evolve from a common ancestor shared with currently living chimps) are actually reached instead of just learning facts that they have to take on faith. On February 12 there was a whole array of events, starting with an all-day information booth at the student union where faculty and graduate students will answer questions about evolution, and continuing with a documentary festival in which videos were followed by a discussion of the main ideas presented. Darwin Day 2002 in Tennessee concluded with a special lecture by philosopher Elliott Sober (of the University of Wisconsin-Madison), who nicely showed why intelligent design theory is actually no theory at all. Now, you don't have to do all this to have a Darwin Day next year, but make sure to borrow a biologist or a philosopher from your local college and the fun is guaranteed.

While it is astounding to see that the state of science education in this country is so poor that people proudly "reject" well established scientific theories simply because they don't fit with their preconceptions, there is a bright side to almost everything, and the evolution-creation controversy is no exception. After my rude awakening to the realities of creationism when I moved to Tennessee, I started to study the problem and its roots. In so doing I learned quite a bit about why people believe what they believe, and what shortcomings of science education are contributing to cause the problem. The result has been a better awareness of the situation and a renewed willingness to do something about it (and a new idea or two to try out). The feeling is spreading throughout the nation: the Society for the Study of Evolution (the premiere professional society of evolutionary biologists) now has a permanent committee dealing with creationism and many of its members are starting to wake up from the torpor of their shielded academic lives to get back into the classrooms and in the public arena.

The reason this is excellent news for everybody, creationists included, is because it goes far beyond the scope of this particular controversy. It means that scientists-shaken by attacks on their discipline from as varied sources as the religious right and the academic left-may be finally starting to realize that they have a moral obligation to come to the public and explain what they are doing, why and how. This, as the final words of Casablanca famously went, may be the beginning of a beautiful friendship. The result could be a better informed and critically thinking public, the true guarantors of a democracy.

N. 23, April 2002
Those who "understand" Bin Laden

Warning: this article is not an exaltation of terrorism or a defense of Bin Laden. But the very fact that I have to start with this disclaimer is a sad commentary on the state of freedom of opinion and speech in contemporary US. What I'd like to talk about here is what my compatriot Umberto Eco recently referred to as "the subtle art of making distinctions," an art that seems foreign to much of the post-9/11 discussion or to the thought processes of many of our leaders.

Many commentators initially said that 9/11 brought about a dramatic shift in the American psyche, and that this nation will never be the same after that terrible day. Perhaps, but the change may be more superficial than we thought. A few months after the tragedy, we have a Georgia company selling commemorative medallions made with steel from the World Trade Center, and some families of 9/11 victims marching and suing to seek millions of extra dollars despite the large amount of governmental and private help that was proffered in record time. Bombing or no bombing, some Americans are still more attached to the mighty dollar than to elementary standards of human decency.

Our government doesn't seem to fare much better at the helm of a war-prone president, son of a war-prone president. The US government, on the one hand, insists in calling this a "war" against terrorism (even though, technically, only Congress can declare war —and it hasn't); but, on the other hand, it refuses to treat its prisoners as POWs. Worse, since the Taliban were obviously a ridiculously puny enemy for the mighty US, we are now looking for additional ones, and Bush nonchalantly threatens Iran, Iraq and North Korea, lumping them under the laughable label of the "axis of evil." Never mind that it is difficult to see communist North Korea plotting together with Islamic fundamentalists (or, for that matter, the mortal religious enemies of Iraq and Iran working with each other). Worse yet, Bush's irresponsible actions (for which he gets a whopping 90% approval rate) threaten to simultaneously undo years of work at reconciliation by the South Koreans and to throw the Middle East in an even worse state of affairs than it already is.

As a byproduct of all this, Americans are seeing their civil rights reduced and an already ballooning military budget further increased in the name of a war that—we are told—will last at least seven years (did anybody notice that that is exactly the span of time of two Bush administrations?). I don't know to what extent Bush is doing this with a cynical eye at maintaining power, or if he is simply extremely naïve in his view of the world; but it is interesting to note that leaders as far back as the Roman emperors have always realized that the threat of military danger and terrorism is an extremely efficient way of keeping your own people under control (the Romans tolerated border skirmishes and used them to exercise their legions; similarly, the comment of an American soldier sent to Afghanistan revealingly was that "This is what we are trained to do, we had been inactive for too long.").

I am most certainly not missing the Taliban. Heck, I think somebody should have kicked their asses long ago. I have no sympathy for people who use religion to subjugate women, annul civil rights and destroy priceless historical monuments. What I am questioning is the assumption that, just by bombing people, we will solve our problems. That is where Eco's "subtle distinctions" become important. We have to make a distinction between condemning and firmly reacting to terrorist acts on the one hand and fooling ourselves into thinking that such reaction will eradicate the problem. The war on terrorism will never be won, just like the equally misnamed and misconceived "war on drugs." That's because to solve these problems we first have to understand their roots. Until we acknowledge that human beings will always go after the easy pleasure of drugs and that people outside the US (especially in the Middle East) have a justifiable rancor against America, we will not make progress on either front. That this is the case should be obvious from the similarly endless conflict that has engulfed Palestinian and Israelis. Their differences are profound, cultural and historical, and cannot and will not be solved by blasting each other to pieces.

Where does said anti-US acrimony come from? If you don't know, you haven't paid attention. Even the European allies of the US have repeatedly taken action against what they see as the cultural and economic imperialism of Americans, and if you add the extreme poverty, ignorance, and religious fanaticism of many people in Middle Eastern countries, you have the perfect recipe for disaster. But it takes a much more serious commitment, and the art of making subtle distinctions, to address the problem seriously. It requires a radical revision of American foreign policy, and perhaps even a bit of a self-critical attitude toward the sacred cow of free-market capitalism. But of course it is far easier to keep bombing the "axis of evil" instead.

We are told by countless bumper stickers that unity is what makes us great and patriotism is proudly expressed with small flags on big SUVs. But what makes this country great is diversity and its respect. To be a real patriot means to support one's government when it does the right thing, but be ready to march against it when it takes the wrong turn. I know there already is a list of "dissenting" and potentially subversive academics being kept since 9/11, and this article will surely get me added to it. I still hope that Americans have learned from their past mistakes and we are not about to spiral into a second McCarthy era, but that would again require cultivating the subtle art of making distinctions, realizing the difference between understanding and condoning. Are we up for the real challenge?

N. 24, May 2002
The meaning of life

Suppose you are watching a very entertaining movie. Whatever movie it is that you might think of that way, it doesn't matter. If your juices are set in motion by an "intellectual" film like My Dinner with André, so be it; if you go for romance or special effects and such, like Titanic, that would do, too. Chances are that, when the movie is over (let's say, when the credits start rolling), you will feel both a sense of satisfaction and one of regret. It's great that you managed to see such a good movie, but did it have to finish this soon? Couldn't the director have given us an extra half hour of dialogue, or action, or simply of screen presence of the actors? Well, the director possibly tried, and the producer cut out the extra scenes to keep the movie to a manageable length (and, if you're lucky, you'll get to see the "uncut" version in DVD anyway).

Now, imagine that the movie is your life, and the closing credits are announcing your departure from this world. If you're lucky, this particular movie (which at least in part you both directed and starred in) gave you the same sense of satisfaction. And, I bet you are also very saddened to see the credits scroll by, regardless of your opinion regarding an afterlife. I suggest that the reason for both these feelings (satisfaction and regret) is precisely because, very likely, there is no afterlife. Contrary to popular understanding, it is precisely the finiteness of our existence that gives meaning to our life. If we truly lived forever (in this or in any other world), we would be bored stiff and continually looking for a way to commit suicide (which, of course, would be impossible). Now, that is my definition of Hell.

How can this be? Well, think back to the movie we started with. Sure, you could have used another twenty minutes of André, and possibly were curious to see in a bit more detail what happened to some of the characters in Titanic after the ship went down (I mean those who survived). But, could you stomach a never-ending version of it? I mean, even soap operas, after a while, become redundant and boring (OK, maybe right after they begin, but that's another story). Human beings are simply not made for ever-afters, happy or not.

On the contrary, what we thrive on is continuous challenge: always new problems to solve, new "finish lines" to pass. We contemplate our accomplishments with satisfaction; but the satisfaction quickly turns into unbearable boredom if we don't have something else to look forward to. As Dante Alighieri makes Odysseus say in his (Divine) Comedy, "Fatti non foste per viver come bruti / ma per seguir virtute e canoscenza" (You were not made to live like brutes / But to pursue virtue and knowledge). The operative word here is "seguir," to pursue. Odysseus is explaining to Dante (who is visiting Hell) why he kept wandering the world in search of adventures, even though he had a home, a lovely wife and a devoted son, and people to take care of (he was king of the Greek city of Ithaca).

Now, I'm not suggesting that we are all driven by Odysseus' mania for new experiences, but isn't this the same basic drive which we find at the root of so much depression, drug abuse, and even conflicts in the world? When human beings don't

have something to look forward to (either because they have too little, and no hope to achieve anything worth achieving; or because they have too much, and don't have any distant finish-line to look forward to), they turn into themselves with invariably dark consequences.

But that is exactly the problem with eternity: if you've got all the time to do whatever it is that you can think of doing, you will exhaust any possible goal you can set for yourself. Then what? Then you'll find yourself in the same situation as one of the alien characters described in Douglas Adams' The Hitchhiker's Guide to the Galaxy series (one of my favorite contemporary philosophical works). The alien in question happened to be immortal, a very unfortunate condition, which he coped with by inventing all sorts of ways to pass his endless time. At the moment he appears in the book, he is involved in the project of personally insulting every sentient organism in the universe in its own tongue. But, of course, it is a desperate (and meaningless) attempt to retard the inevitable: eventually, he'll run out of beings to insult, and out of insults to hurl at them.

The point was, arguably, already clear to Dante: his Comedy (in the sense of a play, not because it is particularly funny) is divided into three sections: Inferno (Hell), Purgatorio (Purgatory, you know, he was Catholic), and Paradiso (Heaven). While the latter should have been the most exciting place to be (after all, you get to spend the rest of eternity—a contradictory concept in itself—basking in the light of God), it was, by far, the dullest, with the Inferno as the place where the action is interesting and the characters are endlessly fascinating and, well, so human.

Contemplating the meaning of life is one of humankind's oldest occupations and we are peculiar for inventing all sorts of fabulous stories to make sense of our existence. One of the minimalist answers I run into puts the futility of such an effort in good evidence. It's a cartoon with a series of living organisms, from simple creatures to more and more complex ones, ending, obviously, with humans. The caption says: "The meaning of life?" Every creature has a balloon that says "Eat, sleep, reproduce;" -- all except for the human's, which asks: "What is the meaning of life?"

There is more to life than eating, sleeping and reproducing (though those are indeed fairly basic components). For example: writing columns or watching movies; being kind to your friends and relatives; and being at least decent to the rest of humanity. But, despite all our mythologies depicting an everlasting happiness in this or other worlds, we would condemn ourselves to a miserable eternity.

What then? Well, just make sure that your double role as director and star of your life's movie is worthy of an Academy Award. It shouldn't be that difficult…

N. 25, June 2002
Ecology vs. ecophily: being reasonable about saving the environment

The situation of the environment is getting worse by any reasonable estimate, and we are simply not doing enough: not only to protect what's left, but to reverse the trend and finally start the long path toward sustainability instead of uncontrolled growth. The problem impacts everybody, including Knoxville (the city were I live), which has just been declared the 8th most polluted city in the US – not exactly a record to be proud of.

Among the many environmental problems we face, few have such a high emotional impact as species extinction. More and more people realize that extinction is, literally, final, which raises not only practical questions (what if we just lost a species of plants producing chemicals useful to fight cancer?), but ethical ones as well (what gives us the ethical ground to condemn entire kinds of other organisms to death because we wish to augment our own standard of living a bit more?).

However, should we go as far as lying in order to save the environment? Some people apparently think so, and seem to follow the same suggestion that Martin Luther gave to his followers: "What harm would it do, if a man told a good strong lie for the sake of the good and for the Christian church [...] a lie out of necessity, a useful lie, a helpful lie, such lies would not be against God, he would accept them." Well, I don't know about God, but I'm not too sympathetic toward people who lie, even for a good cause.

In the case of the environment, I draw a distinction between ecologists and ecophilists. An ecologist, strictly speaking, is a professional who studies the interactions of living organisms with the environment. I do research on ecological matters, so I am an ecologist in that sense of the word. An ecophilist is somebody who loves the environment and the living world and wishes to do something to protect them. Accordingly, I am an ecophilist as well.

The problem comes when people mix the two perspectives and misuse science in order to advance the cause of environmental protection. When that happens, we are lying for the greater good, just like Martin Luther suggested we should do. In both cases, I think we are wasting ethical currency, because neither God (presumably) nor the environment need that sort of help.

Let's consider a recent example of questionable ecophilia. Biologist and Pulitzer Prize winner E.O. Wilson has given an interview to the Christian Science Monitor (25 April 2002) in which he has made an impassionate appeal for scientists to be activists. I couldn't agree more. Scientists have an ethical duty as human beings to become involved in issues of public education, especially when they can bring their expertise to direct bearing over fundamental questions such as the preservation of biodiversity. And Wilson has done an admirable job in just such role. However, Wilson also abandoned himself to statements that he will come to regret, as soon as the perennially vigilant anti-environment movement will hear about it. And the damage will be all the greater for the environmental community because of the high status of the scientist who made those claims.

Wilson said that “Before humanity came along, species were dying at a rate of about 1 per million per year, and they were being born 1 per million per year. So, through time immemorial, things have been pretty much in balance. Now we’re speeding up the death of the species 1,000 times and we’re lowering the birthrate. The cradles are being destroyed.”

There are various problems with this statement, which take a significant amount of power out of it and put a dent into Wilson’s, and the entire environmental movement’s, credibility. First off, Wilson knows very well that extinction and speciation rates have fluctuated wildly throughout the history of the planet, with several documented mass extinctions and a constantly fluctuating rate of “background” extinction: no such nice balance between death and birth has ever been maintained on this planet. Indeed, biologists would be at a loss to explain how such balance could possibly happen by natural forces (which are not in the business of long-term environmental planning). Second, Wilson – later on in the same interview – states that the current estimate of the total number of species living today on earth varies from 1.8 to 10 to 100 million. Hmm, given that we are talking about at least two orders of magnitude of difference, how do we know that we have sped up things by 1,000 times? It could be only 10 times, or maybe 100,000 times. The data are simply not there for us to make an educated (as opposed to a wild) guess.

Now, I am sure that Wilson did not mean to consciously mislead the Christian Science Monitor readers, and it is not certain to what extent what was printed was what he meant to say. However, similar exaggerations are presented by ecophilists commonly enough to have fueled a copious literature by a backlash anti-environmental movement (see the excellent book by Paul and Anne Ehrlich, Betrayal of Science and Reason). We don’t need to exaggerate the sorry state of the environment; it’s bad enough as it is. There is good science to give plenty of ammunitions to those who wish to advance the environmental cause. However, if we are not careful with the accuracy of our statements (not to mention if we lie about the facts as some environmental groups have repeatedly done) we lose the moral high ground and we do irreparable damage to the cause of scientific education and to the very problem we are so concerned about. Let’s be scientists and activists by all means, ecologists and ecophilists, but always keep the facts as separate as possible from the feelings. That really helps the environment.

N. 26, July 2002
Economic vs. social health: it's not the economy, stupid!

Money can't buy you happiness. Apparently, everybody knows this except Americans, who keep thinking that economic prosperity automatically brings all sorts of goodies, from democracy in the former Eastern Block to satisfaction with one's own life here at home. Well, the data are in, and the conclusion is that money really cannot buy us happiness.

Perhaps the most astounding indication of this is a simple but powerful graph published by the Fordham Institute for Innovation in Social Policy: it shows a steady increase of the US Gross Domestic Product from 1959 to the late '90s. No question about it, America has obviously gotten richer. However, equally impressive—and much more disturbing—is the trend of the Institute's Index of Social Health, based on nine indicators that include child abuse, child poverty, high school dropout rates, average weekly earnings, unemployment, health insurance coverage, senior citizen poverty, health insurance for the elderly, food stamp coverage, access to affordable housing, and the gap between rich and poor. The social index went up in parallel with the economic one until the late 1970s. From then on it has changed to a downward spiral that continues almost uninterrupted to this day. There appears therefore not to be an automatic link between economic prosperity and social health or, as a Brazilian general commented on that country's economic boom during the '70s: "the economy's doing fine, it's just the people that aren't."

This discrepancy can be glimpsed by the comparison of a few simple facts. The "good" news is that, in the period covered by the Fordham analysis, the average size of a new home has expanded from 1,500 to 2,190 square feet; the number of cars has risen from one for every two Americans age 16 or older to one for each driving-age individual; the number of Americans taking cruises each year has risen from 500,000 to 6,5 million; the production of recreational vehicles has soared from 3,000 to 239,000; and the number of amusement parks has leaped from 363 to 1,164.

Now for the bad news: suicide among America's young people has increased 36% since 1970, and triple the rate in 1950; the gap between rich and poor in America is approaching its worst point in fifty years and is the largest such gap among eighteen industrialized nations; average weekly wages, in real dollars, have declined 19% since 1973; the United States still leads the industrial world in youth homicide; America has more children living in poverty (14.3 million) than any other industrial nation; 43 million Americans are without health insurance (the worst performance since records have been kept) and the number has increased by more than one third since 1970; and violent crime remains almost double what it was in 1970, even with substantial improvements during the 1990s.

Hmm, it seems like this picture makes no sense if one insists on making the equation 'more money = better life.' Of course, money does make a difference for both individuals and societies. After all, the economic and social health indices did grow in parallel for almost two decades. To paraphrase Karl Marx, before you can work on the

meaning of your life you have to have enough food in your stomach. But once peoples and societies reach a certain degree of economic prosperity, things become a bit more complex.

One of the factors that complicate things in the US is that the huge gap between the rich and poor is not counterbalanced by much of a social net to help the poor get better health, education, and, therefore, jobs. This relates to what is perhaps one of the most dangerous myths of American society: that this is the land of opportunities. Sure, it is if you are in the highest socio-economic classes and you wish to keep accumulating wealth across generations, as several dynasties of magnates have done since the beginning of the industrial history of this country and continue to do now (Vanderbilt and Trump come to mind as just two examples among many). This is also the land of opportunities in a rather more limited fashion, for example if you are a poor immigrant aiming to, at least, save your family from starvation, perhaps even getting to possess your very own VCR. But upward mobility in the US (or the myth of “from the log cabin to the White House,” as it is sometimes referred to) is actually no different, and it is even worse, than that in most other industrialized countries, when one bothers to use actual data instead of political rhetoric. The American poor are actually locked into their status: 54 per cent of those in the bottom 20 per cent in the 1960s were still there in the 1990s, and only 1 per cent had migrated to the top 20 per cent. The US has the lowest share of workers moving from the bottom fifth into the second fifth, the lowest share moving into the top 60 per cent and the highest share of workers unable to sustain full-time employment. And Americans are way overworked compared to their European counterparts.

Next time you are told that you live in a society where everybody can become President or, better, the CEO of a large company, ask about the actual numbers instead of unrepresentative anecdotes. You’ll be surprised to find out that the American dream is really a nightmare for far too many people. Isn’t it time to wake up?

N. 27, August 2002
Is god in our brains?

Imagine you are about to have a mystical experience. You may be absorbed in prayer in the silence of your room, or perhaps you are meditating and—helped by the lack of distraction to your senses—you are about to experience a feeling of unity with the universe, an experience that will reinforce your conviction that there really is another world out there; that what we call reality is only a pale reflection of the real thing. The question is: what is going on in your brain while all this is happening? Are your mental powers, in fact, allowing you to, at least temporarily, gain a higher view of the universe? Or, is your brain simply malfunctioning under unusual circumstances and playing tricks on you? In the following, I will lay out the evidence as best as we can assess it; by the end of this essay, you may wish to look into this matter more carefully and decide for yourself.

Andrew Newberg and Eugene D'Aquili, two researchers interested in the neurobiology of mystical experiences, carried out an intriguing set of experiments. They asked Buddhist meditators and Franciscan nuns, respectively, to try to achieve a state of deep meditation or prayer while in an isolated room in a laboratory. The subjects were hooked to a computerized scanning machine that could visualize which parts of their brains were unusually active or inactive. The results were very similar in the two cases. For one thing—and not surprisingly—the brains of the meditators and nuns activated areas that are associated with intense concentration: praying or meditating is an intellectual activity that requires effort on the part of the brain. More interestingly, Newberg and D'Aquili saw that another region of the brains of their subjects was going almost completely dead: the posterior superior parietal lobe. This area is known to be in charge of determining the boundaries of one's body, a fundamental task for any living being because it allows us to navigate a complex three-dimensional world with no more accidents than occasionally spilling the coffee.

We know that the posterior superior parietal lobe plays that particular role because there are patients with damage in this same region who literally cannot move around without falling, missing the chair they intended to sit on, and generally having a fuzzy understanding of where their body ends and the rest of the universe begins. It is a truly awful condition, one of many that have taught neurobiologists so much about the inner workings of the human brain.

Now, what is interesting is that Newberg and D'Aquili's subjects described their mystical experience in an uncanny similar way to the reports of brain-damaged patients: they said that, at the peak of their meditation or prayer, they felt "one with the universe," feeling a dissolution of their bodies into the wholeness of reality. The brain scans supported their interpretation of what was happening: because of the low level of sensorial stimuli (the experiments were being conducted in dark rooms with no sounds) the brain was fed little in the way of information about the outside world and simply shut down the corresponding areas (possibly to save energy: the brain is by far the metabolically most costly organ we have).

The question is: where the Franciscan nuns and Buddhist meditators really accessing an alternate reality, or where they simply experiencing an odd side effect of putting their brains under unusual circumstances?

Michael Persinger is a Canadian neurobiologist who, like Newberg and D'Aquili, is interested in scientifically investigating mystical experiences. He has started out with the known fact that some patients who suffer from seizures in the temporal lobes are subject to auditory or visual hallucinations, which they often interpret as mystical experiences. Some of these patients are convinced that they talked to God and that, as a result, they gain a special "cosmic" insight into reality, consciousness, and the meaning of life. Persinger set out to literally repeat these experiences under controlled laboratory conditions. He built a helmet that causes small, intense, and directed magnetic fields inside the brain to simulate micro-seizures that do not cause any permanent damage. In perfectly Victorian tradition, the good doctor has experimented upon himself and found that magnetically induced seizures in the temporal lobes do indeed generate the same sort of hallucinations and mystical experiences reported by the patients.

Again, what is going on? Is Persinger's helmet a machine that can potentially put everybody in direct contact with God, or does it show that many mystical experiences are in fact caused my seizures, that is by a malfunction of the normal brain circuitry?

Here is where the facts end and the theorizing begins. From the point of view of purely logical possibilities, the 'faulty-brain-under-unusual-circumstances' and the 'triggered-real-mystical-experiences' interpretations are both possible, and we are free to believe whatever fits better with our general outlook on such matters. However, I would argue that by far the simplest and most reasonable explanation of the facts is indeed the naturalistic one (i.e., that we are witnessing a temporary malfunction of the brain triggered by abnormal conditions such as sensorial deprivation or seizures). Why? First, this interpretation fits with all we know about the brain, the phenomenon of hallucinations, and even the natural tendency of human beings to invent explanations when faced with unusual sense data. Second, if God really built that ability in our brains for the purpose of communicating, why did He choose to make it much easier for some individuals and essentially impossible for others to achieve such a state of blessing? Third, it is interesting that different subjects interpret their experiences differently, depending on their cultural background and previous beliefs, again something that fits better with a naturalistic explanation than with the refined plan of a supernatural being.

Either way, you'll have to use your brain to reach a conclusion, but how do you know that you are not having a seizure that is biasing your judgment? Isn't the human brain a wonderful thing to ponder with and about?

N. 28, September 2002
Why bother? Why being liberal is not a lost cause

I am what most people in the United States would describe as an idealist, a progressive, a liberal, a social democrat, or worse. Consequently, the question that a few of my friends and I often ask ourselves is: why bother? Let me explain. The world some of us would like to see, and are fighting to help bring about with our actions and writings, is one in which more people will use reason to make their decisions; fundamentalist religion will be seen as silly at best, and profoundly misguided and dangerous at worst; the environment will be thought of a real priority; war will not be possible because of a truly civilized international system of police and tribunals (you know, just like modern societies are an improvement over the law of the jungle?); and human beings will engage not in the search for profit or shallow consumerism but in the pursuit of true happiness and fulfillment. Scary, eh?

Now, the world in which we actually live is apparently characterized by rampant superstition and nonsense; fundamentalist religion is seen as a respectable, even enviable, way of life; the environment keeps taking a beating notwithstanding international conferences and political pledges; wars are been fought all over the planet and more are in the planning; and many of our society's role models are among the shallowest (movie and sports stars) and meanest (corporate executives) people one can think of.

I repeat: why bother? I mean: in order to be a liberal freethinker one has either to be a masochist or a hopeless optimist, completely out of touch with reality. We are bombarded with bad news every day and from every corner. Yes, we had eight years of Clinton, blessed be the memory of his presidency, but he wasn't really a liberal or a progressive. Rather, he was a fairly moderate Republican (yes, you read correctly), and hardly slowed down the onslaught of corporate interests and environmental catastrophe that has been the hallmark of this country's policy since Reagan. To make it even worse, now we have a president who was not elected democratically (hey, I thought that happened only in Third World countries!), who keeps showing a callous disrespect for the environment and an equally abominable close tie to big business, and of whom (for some reason) most people keep approving because he has "character" (by which they must mean that he is able to lie about his past better than Clinton did).

All of this sounds hopeless, and no matter what my friends and I write or do, it will likely not change perceptibly during our lifetime. Then again, before yielding to depression and committing suicide or, worse, going on annual pilgrimages to DisneyWorld, we should consider the idea of different temporal horizons of activism. You see, all that I have described so far happens at what I think of as the mid-time horizon, i.e., stretches of time that can be measured on the order of a human life. But there are at least two additional horizons to consider if you are as stubborn an optimist as I am.

First, there is the near-time horizon. This is the here and now, in which we can make a huge difference at the local level. Our doings and writings can touch people in countless ways. It's true: I get testimonials via email every week. Our actions can make

a difference between a school board adopting a textbook that teaches the nonsense of creationism and another based on the best science available. This will affect thousands of kids, immediately! True, a protest at the local nuclear plant may go completely unnoticed; but other causes, like the No-Global movement, have made themselves heard the world over (despite the obvious irony intrinsic in such success…). Furthermore, things do change in major ways, from time to time. Let's not forget that the Soviet Union and the Berlin wall crumbled in front of our eyes after having been apparently unfaltering symbols of oppression for decades. Equally surprisingly, Nelson Mandela went from political prisoner to head of state in South Africa, and the Milosovic government in the former Yugoslavia disappeared. These things don't happen if we leave the field entirely to conservative and regressive forces.

Then there is the long-time horizon. I know most people think history is boring, but that's a pity, because they would find that things do change during the course of human history and, often enough, for the better. A few decades ago it would have been perfectly acceptable to enforce racist laws in the United States; today this is unthinkable. Not long before that, women were not allowed to vote, while now all political parties consistently court them. Slavery was sanctioned in Western countries until the 19th century, but it is now actively fought everywhere in the world. Religious fundamentalists may have a large influence on the cultural and political life of the United States and the Middle East, but that is a far cry from the absolute dominance of religious bigotry that characterized several centuries of Western history deservedly referred to as "the dark ages." And the environment wasn't even an issue until the second half of the 20th century. These long-term changes, like the short-term ones listed above, were made possible by the continuous action of people who kept protesting, marching and writing to further human flourishing in the broadest possible sense. Most of them saw no perceptible change for the better during their life times, but they believed it would eventually come if they kept up the struggle. They were right.

I am under no illusion that this column or anything I do will change the world, but I do know that people are positively affected by what is written and done in the here and now. And I know that it is because of my friends and colleagues who keep protesting against nonsense, greed and repression that we can conceive of a better future for humanity. Indeed, to some extent, that future has already happened.

N. 29, October 2002
On intuition

Dmitri Mendeleev is resented by high school students, and lauded among scientists for having come up with the idea that the natural elements can be arranged neatly and logically in a regular fashion, based on simple properties such as their atomic number. Mendeleev's Periodic Table is one of the best examples of synthesis in science, an idea that brought about the ability to make predictions about the discovery of new elements. What is less known is that Mendeleev had the idea in a dream—not while he was sitting at his desk thinking about the order of the universe. There are other examples of scientific discoveries made, not through the stereotypical behaviors we associate with scientists, but during dreams, walks in the park, or sudden episodes of seeing a solution that wasn't there until a moment earlier.

The role of intuition in scientific discovery has been has much maligned in favor of the importance of rationality in everyday life and human relationships. Worse, the two (intuition and rationality) have often been considered as opposites, as defining different types of mental activity, and even different kinds of people. Just think of Star Trek's Mr. Spock: the quintessential rational entity, yet completely incapable of both emotions and intuitions.

It turns out that research on what actually constitutes intuition is rapidly demolishing some old prejudices (see S. Dehaene, et al., in Science, 7 May 1997) and, in the process, forcing us to think of human beings again as creatures that have to have both intuition (and emotion) and rationality in order to function properly—so much for Mr. Spock.

First, we need to look at what one might possibly mean by "intuition." The most common interpretations of the word include the immediate understanding of something that is not obvious ("intuitive"), a hunch ("I've got this intuition"), the whole as seen by the mind at once ("an intuitive understanding of the problem"), or some kind of natural knowing independent of logical reason ("I just know it, period"). If we exclude the first, rather uninteresting, meaning, all the others have something in common, in that they refer to somehow seeing something before (or even despite) rational deliberation.

Neurobiological research on patients with damaged brains, or using functional magnetic resonance imaging of our thinking organ, show that certain areas of the brain seem to be particularly involved with intuitive thinking. Interestingly, the same areas are associated with emotions, since patients affected by damage in those areas not only loose the ability to intuit, but also suffer severe loss of emotional capabilities. This, of course, goes a long way toward explaining why popular culture has forged a link between emotions and intuition.

Where popular culture is wrong is in contrasting intuition and rationality. Research on the topic is helping to draw a picture of intuition as a bridge between subconsciously processed information and the action of conscious thought (see G. Vogel, in Science, 28 February 1998). Intuition brings the results of subconscious processing to the

attention of conscious (and therefore rational) thought. Rather than being opposed to each other, intuition and rationality are strictly interdependent.

Not only does intuition provide the fuel for rational deliberation, but the relationship goes the other way too. One can think of rationality, when well used, as a sort of filter to discern good from bad intuitions: just because we have an intuition, it doesn't mean that we are right. What it does mean is that we have something on which to focus our conscious attention. It is rational thought, through a slower but more methodical analysis of the evidence, that helps us decide if our subconscious was right in the first place. It is therefore equally imbalanced to be mostly "intuitive" (i.e., ignoring that one's first impression can be wrong), or too rational (i.e., ignoring one's hunches as surely misguided).

Interestingly, and again contrary to popular conception, intuition is not a generic ability, i.e., there is no such thing as intuitive or non-intuitive people across the board. Rather, one's intuitions tend to be more accurate the more one has accumulated expertise in a particular field. A chess master's intuition at chess is better than a novice's, but the master does not have the intuition about car problems that an experienced mechanic has, and vice versa.

This means that it is possible to improve one's intuition by working in the same field for years, accumulating so much experience that our brain eventually tends to transfer part of the processing to the subconscious: we suddenly seem to "know" the answer, almost before we can formulate the question. This also has important and often neglected applications. Consider, for example, the common business practice of moving people "vertically" within a company as soon as they have demonstrated ability at a particular job. What the company is doing is literally to reset the knowledge base and hence intuitive abilities of the employee with every move, with the result that one is kept in a semi-permanent state of incompetence. That can't be good for business. Think about it, the next time you are promoted, or give a promotion.

N. 30, November 2002
Is the US the ultimate rogue state?

As often when I begin a column that I think might be particularly offensive to some readers (apparently, some readers will find a way to be offended by almost anything I say each month, but I can do little about that), I will begin this one with a couple of disclaimers. You are about to read some disturbing things about the United States of America. This does not imply: a) that I don't appreciate the US as the only experiment in history of a country established on the rational principles of the Enlightenment; nor: b) that I have any sympathy whatsoever for tyrants and dictators, be they Saddam Hussein or Augusto Pinochet.

This said, let me make a case for the idea that the United States is, in fact, the ultimate "rogue" state and that it—therefore—cannot use the label on other nations as an excuse to attack them (at least, not rationally). Let's start from the basics: the Oxford dictionary defines rogue (first meaning) as: "Dishonest or unprincipled person; mischievous child." I assume we can transfer this definition to the level of state, though that raises interesting philosophical questions about the "character" of a nation which we will need to set aside for now.

Here, then, is my evidence for the conclusion that the US is the mother of all modern rogue states. First, arguing for a pre-emptive strike against another sovereign nation is in direct violation of the United Nations charter, and therefore puts the US outside of the international community. To vow to abide by a certain code of conduct and then refuse to do so when it is inconvenient for oneself surely qualifies as "mischievous" behavior.

Second, the US has consistently avoided joining the international community in a number of treaties that have—ironically—seen it side with "rogue" states such as Libya, Iran, and Iraq (in other words, seen from outside, we look a lot like part of the "axis of evil"). Examples include: back-pedaling on the Kyoto accord on the environment; refusing to join the anti-land mine treaty; refusing to join and actively sabotaging the international tribunal. It is "dishonest" and "unprincipled" to ask for other people to respect international law and then arrogate for one self the right to violate it.

Third, the US has recently announced that it will allocate funds to train anti-Iraqi militias recruited among the many dissenting minorities harassed by Saddam Hussein. How, exactly, is this not equivalent to setting up a terrorist training camp? Is it just because these people will be doing the dirty work for and not against the US? Because we are right and they are wrong? I am reminded of a Star Trek—Next Generation episode (one of the highest sources of my enlightenment) in which an otherwise seldom judgmental Captain Picard is reproaching a defecting Romulan general for his past military actions against the Federation. The general reminds Picard that one people's butcher is another people's hero. What should distinguish the US as a democracy are not only its principles, but the way they are defended. If the end justifies the means, then the US is moving perilously close to the sort of behavior that it condemns in others.

Which brings me to the fourth point: surely our impending aggression of Iraq cannot seriously be framed as a defense of democracy. Doing so would be another example of dishonesty and lack of principles. If the US is really interested in democracy, why on earth is it attacking puny Iraq while at the same time give permanent most favorite nation status to China? Have we forgotten Tien An Mein? Do we really think that the Chinese leaders threat their people better than Hussein threats his? And don't we know for sure (as opposed to speculating) that the Chinese do have plenty of weapons of mass destruction? I am not, of course, suggesting that the US declare war to China, just that it be a bit more consistent (principled, not rogue) in its foreign policy.

Now, being a rogue state in the sense in which the US surely is can, and has been, defended on rational principles. Robert Kaplan, for example, has written a book entitled Warrior Politics: Why Leadership Demands a Pagan Ethos, in which he makes the argument that the US, as the only superpower in the world, should behave outside of international law. Indeed, Kaplan criticizes most American politicians for being held back (ironically, I would add) by their Christian ethos. Instead, he claims, they should embrace Machiavelli's "pagan" attitude and do what needs to be done.

Kaplan's dichotomy is, I think, the real conundrum that the US has to resolve during the 21st century. Does the US want to be seen by the rest of the world as a principled nation, fighting fairly for what it sees is right, or as a Machiavellian entity willing to lie and cheat to get whatever it feels is due it? Think about it really hard, because this will determine how history will see the US and, more importantly, is already affecting the lives of millions of people on this planet.

N. 31, December 2002
What do you mean, "rationally" speaking?

From time to time I receive a letter in response to this column that accuses me of being an intellectual snob. Often the writer refers to the very title of the column, “rationally speaking.” The argument of my correspondents goes something like this: (unstated premise) since rationality equals truth, and (obvious statement of fact) you call your columns “rational,” then (first conclusion) you are so arrogant as to claim that what you write must be the truth, and (second conclusion) therefore imply that anybody who disagrees with you is wrong.

Let’s carefully analyze the unstated premise and the two conclusions (no sense in denying the fact that the column is, indeed, called “rationally speaking”), because I think this will shed some light on both my goals in writing these pieces and, more importantly, on some common misconceptions about rationality and truth. First off, the unstated premise that rationality necessarily leads to truth is clearly false, and acknowledged by philosophers since the time of Plato. Don’t get me wrong, Plato did think that the best path to the truth is indeed rational thought, but he also acknowledged that one can arrive at the truth by other means (e.g., by sheer luck, as in guessing). More importantly for our discussion, Plato’s dialogues are full of examples of people rationally arguing different positions, of which at most one can be correct!

Since there is no necessary equation between rationality and truth, this takes care of the second conclusion from the above piece of reasoning: I cannot possibly be implying in my columns that those who disagree with me must be wrong. At best, these columns present an argument in favor of a particular conclusion or position. Their value is in laying down that argument as clearly as the writer can manage, to then let the reader decide how that argument measures up against others. It is all part of the ongoing discourse among human beings that is such a central part of any desirable society.

As far as the first conclusion of the above reasoning is concerned (I am arrogant enough to think that I am right), surely that is a straw man. Anybody defending a particular position, in writing or in person, must be doing so because they think they are right (okay, perhaps with the exception of sophists and some lawyers and politicians). It simply makes no sense to accuse somebody who disagrees with you of being convinced of being right. You are too, or you would not argue with them! Of course, just because people are convinced of being right, it doesn’t follow that they are. But that is precisely the value of continued rational discourse: I present my best arguments, you read them, think about them, come up with your best counter-arguments, and so on.

Does this back and forth actually lead somewhere? Do people ever change their mind? Of course they do. Why, I’ve changed my mind more than once just this year! What may seem to make the enterprise of rational dialogue a desperate one is that people seldom acknowledge their change of mind. There are good reasons for this, other than simple human pride. To begin with, if you have thought hard about something, and have formed an opinion over years of reading and listening, you will not change your position overnight, and you probably shouldn’t. Instantaneous conversions are the stuff of

religious experience, not of rational discourse. Second, research on critical thinking and human cognition has shown that the human brain is naturally resistant to changing its patterns, and does so only after repeated exposure to contrasting information (which increases the so-called “cognitive dissonance” between one’s own beliefs and the reality that one perceives). That is why one rarely wins debates with other people, and yet debates—along with other forms of dialogue—are useful because they can stir people to reconsider some of their conclusions.

So, rationally speaking does not (necessarily) mean “truthfully” speaking, though of course if I write something in good faith, I do think that I am correct in what I am saying (and so do you, whenever you write a letter to me arguing against my writings). The rational way to attack people’s arguments, therefore, is not simply to accuse them of the arrogance of thinking they are in the right, but in pointing out exactly where we think they went wrong.

The irony is that rational discourse is so entrenched in the human way of thinking that even people who allegedly reject it as a way to the truth do, in fact, use it. Not long ago a couple from a county in rural Tennessee complained that they did not want their child to be exposed to critical thinking and argumentation in the public school he was attending, because that was contrary to their religious belief. Apparently oblivious to the obvious contradiction, the parents hired a lawyer to argue their case in court! We just can’t do without logic and rationality, even when we consciously attempt to reject it.

I can’t wait to read the arguments I will get against the position defended in this column!

N. 32, January 2003
Human instincts and virtue ethics

Americans are reasonably happy people. This is one of the findings of a recently published survey of self-reported happiness worldwide (see Scientific American November 2002). Interestingly, however, they are not the most happy people on earth. That distinction goes to the populations of northern Europe, despite the harsh winters and lack of sunshine. The rest of Western Europe, Canada, Australia and New Zealand report levels of happiness similar to that of the United States. Intermediate happiness can be found in most Asian countries (including China), while lower levels are typical of South American countries, and lower still is the self-appraised happiness of most Africans (though the absolute minimum is found in Russia and in some of its former satellites).

Philosophers have discussed what makes humans happy or unhappy at least since Aristotle wrote his Ethics, but it seems most obvious to ask the people themselves (Aristotle was famous for not thinking of such simple solutions to complex problems: he once claimed that women have a different number of teeth than men, but it didn't occur to him to open Mrs. Aristotle's mouth and count them!). As you might imagine, financial security is crucial to happiness. Astoundingly, however, the level of income above which more money doesn't seem to matter for most people is low: only about $13,000 / year, or circa half of the median American income! Above that, more importance is carried by factors like health, attitude, professional occupation, and relationships (married or divorced people are happier than single ones), which explains why people living in countries with lower income but better social health indicators (such as Scandinavian nations) report that they are significantly happier than the highly capitalistic US.

Aristotle, however, seems to have gotten much right in his analysis of happiness and how to achieve it. First off, he realized that we are constantly trying to overcome an innate "weakness of the will" (the Greek word is akrasia), a natural tendency we seem to have to simply satisfy our basic instincts (food, sex, and power). Modern biology gives us important clues as to where akrasia comes from: for most of our evolutionary history, we lived in environments in which it was difficult to procure food, hard to find a mate (and especially to have offspring), and where getting to be the alpha male was the best way to insure both. Natural selection has therefore built into us powerful instincts that drive us to constantly seek such things even today. The difference, of course, is that, in our modern environment, food is usually plentiful (at least in Western societies); you can find dates on the Internet or scanning a newspaper, and neither of these requires you to be the President of the United States to be successful.

Aristotle realized (and the modern survey confirms) that true happiness—while requiring a certain amount of food, sex, and control over one's destiny—is a much more sophisticated affair than just meeting the basic needs. That is why he attempted to explore how we can reach the goal of "eudaimonia," a word that, while normally translated as "happiness," in fact implies more than low-grade contentment. Aristotle suggested that we need to cultivate virtue, because virtue is like a good acquired habit: it requires constant reinforcement to oppose our natural tendency to yield to akratic

temptations. So, for example, most of us feel a natural attraction toward that double cheeseburger, because of its amount of fat and proteins, both hard to find in our prehistoric environment. But our rational self, knowing about cholesterol and heart attack, can make a strong case that our eudaimonia would be increased by not walking into a fast food place at all times of the day. Such case needs to be made with ourselves every time we are faced with the same choice, which is why keeping a reasonable diet is such an ordeal. According to Aristotle, you also don't want to go to the other extreme (sorry for the vegetarians among you), and deprive yourself of life's pleasures altogether. That would be erring on the other side of his famous golden mean: for every virtue there are two opposite vices, though one may be more easily avoided than the other.

Aristotle's system is often referred to as "virtue ethics," because it is based on a theory of what it means to be virtuous in general, and does not provide specific suggestions or rules of conduct for particular instances (unlike, say duty-based ethics, of which most religious and some secular systems are examples). That is why virtue ethics both appeal strongly to some people (historically, especially the ancient Romans), and it is completely repulsive for others (most religious fundamentalists, be they Jewish, Christians, or Muslims). Virtue ethics is not about following somebody else's idea of what is right and wrong, it is about a continuous, difficult, and uncertain process of self-discovery, during which one slowly comes to terms with human nature and how it can be ameliorated.

Regardless of your favored system of ethics, I find consolation in Aristotle every time I concede a cheeseburger to my akrasia, and I feel ecstatic when I manage to feed my eudaimonia with a healthy portion of grilled fish. Our search for happiness continues, and I suspect that its very pursuit has much to do with what it means to be human.

N. 33, February 2003
Gays, in the military and outside of it

I never understood what the “gay problem” is all about. As far as I am concerned, the moral aspect is simple: as long as the people involved are consenting adults, what they do in their bedrooms is only and exclusively their own business, end of story. Alas, plenty of people who are otherwise adamantly against any interference of the government in the private life of its citizens (e.g., when it comes to business practice or guns control), cry out loud for a government-imposed “morality” that extends from the treatment of gays to that of abortion practices and school prayer.

It was therefore no surprise that last November the US Army dismissed nine of its linguists—all experts in crucial languages for the “war” against terrorism, such as Arabic, Korean and Mandarin Chinese —invoking that most unfortunate Clinton doctrine, the “don’t ask don’t tell” policy that has regulated dismissal of gays from the military over the past few years.

As readers may remember, President Clinton started out his first term with a couple of bold moves, one of which was an executive order that would have made it as normal for gays as it is (now) for blacks to be in the army (the other bold move was the call for a universal health care system, which ended in total catastrophe despite Democratic control of both the House and Senate, but that’s another story). Soon came immediate criticism from the far right, coupled with the obvious fact that the gay community can’t muster more than a limited number of votes which usually go to the Democrats anyway (ah, the beauty of a two-party system with essentially no choices!). The predictable result was that Clinton “moderated” his stance and ended up proposing his infamous “don’t ask don’t tell” compromise.

From a moral perspective, the new policy makes no sense: one either thinks that a gay lifestyle is incompatible with the “values” of the military, in which case allowing gays to stay just because they don’t declare themselves is simple opportunism; or one thinks that the sexual habits of one’s soldiers matter not to the functionality of one’s army, in which case the policy is an example of moral cowardice. Either way, Clinton, gays, and rationality lose, while bigotry scores points.

From a practical viewpoint, furthermore, not only there is absolutely no evidence that the presence of gays in the military has any negative effect on troops morale (remember, the same was said of blacks and women, before those issues were settled), but we have at least one glaring example—the Netherlands—of an army which openly embraces gay culture and doesn’t seem to be any worse for it.

But the more interesting point one can take from this and similar discussions (e.g., those about abortion and school prayers) is that the standard distinction between “liberals” and “conservatives” in terms of being respectively in favor and against a large role of government in our lives just doesn’t cut it. In reality, we need to consider at least two major axes along which political positions and public opinions can be distinguished: on the one hand, there is the “economic” axis, on the other hand, the “social” axis.

One can call for little governmental interference in economic matters while at the same time cry out for a large role of big brother in people's bedrooms and public schools. Such person would be a religious conservative. But it is also possible to be a libertarian and favor little or no government influence in any sphere of life (except perhaps national defense). A third position is occupied by people who would want a large role of government in the control of the economy (to balance the natural tendency of big business to act amorally and with reckless disregard for the public good), but little in the sphere of personal life. That would be a progressive liberal, such as myself. Then there is the strawman "pink" liberal that most people in America seem to love to hate, the guy who wishes for governmental control of everything, communist-style. Needless to say, this fourth corner of our logical space of political positions is essentially empty in this country (though certainly not throughout the world).

Reality, of course, is more complicated that this simple classification may hint at, but thinking along the two axes of economy and social issues at least brings us beyond the simplistic dichotomy of "liberal vs. conservative." It also strongly suggests that we should have at least three, and possibly four, parties to represent the four corners sketched above. Instead, we are forced to choose between two alternatives that don't quite fit what a growing number of Americans actually thinks. I therefore propose to split the Republican party into one of economic conservatives but social moderates, and one of economic and social conservatives (the latter mostly populated by the Christian right). Democrats could split into social and economic liberals on one hand, and social liberals but economic conservatives on the other. But who is going to force such healthy multiplication of political choices: the people, or the government?

N. 34, March 2003
America, Europe, and the rest of the world

How deep is the current divide between Europe and the United States in terms of how to conduct international affairs? Alarming notes have been sounded on both sides of the Pond to the effect that the rift risks breaking up NATO and rendering the United Nations “irrelevant” (to use the rhetoric of the Bush administration). Usually, the French are being singled out for leading the rebellion against the US hegemony, even though an overwhelming majority of European citizens have been voicing their opposition to the current US policy on Iraq, even in “pro-American” countries such as Britain and Italy.

As it is often the case in complex matters, one cannot form a reasonable opinion just by listening to alternative ways of spinning the same stories in the media (assuming that one bothers to check directly what the French or British press say, since American media are becoming more and more homogeneous thanks to their ownership by an increasingly smaller number of multinationals). It was therefore refreshing to see actual data from a large survey of American and European attitudes conducted by the Chicago Council on Foreign Relations (CCFR). The picture emerging from the study is more complex and nuanced than what we tend to hear trumpeted by talking heads and media pundits.

It comes down to the following: Europeans are inclined to agree with Americans on more issues than either of them agrees with the rest of the world (this is good news for people who are worried about the collapse of the West). However, there are major areas of disagreement that might make for a very interesting upcoming decade in geopolitics (and this is the good news for those who are interested in a more open discussion of international issues). Let’s take a look at some of the details.

First off, Americans and Europeans really like each other, and this goes even for the French. On a scale of 0 to 100, Americans rate European countries between 61 (Germany) and 76 (Great Britain), which is much higher than they rate any other country except Canada. Conversely, the Brits rate the US at 68, and the rest of Europe doesn’t go any lower than the Dutch’s 59. Furthermore, Europeans and Americans see the same threats in the world, with terrorism and Islamic fundamentalism ranking the highest. And, both sides agree that war on Iraq would be justified, if backed by the United Nations (complete opposition to the war run at only 13% in the US and 26% in Europe at the time the survey was conducted).

However, worldviews start to diverge when one digs a bit deeper. Generally speaking, Americans find the world a much more threatening place than Europeans do. Most importantly, the two also differ on their analysis of why some threats are there to begin with. For example, 55% of Europeans think that US foreign policies have directly contributed to the terrorist attacks on September 11, 2001 (and I would add that a good case can be made that they are not far off the mark).

Americans and Europeans also sharply disagree on how to fix the problems they face. Only 19% of Europeans would like to increase their country’s military spending, as

opposed to 44% of Americans (and one need to notice that the US already allocates significantly more money to the military than European countries do). On the other hand, Europeans are much more willing to spend their resources on foreign aid, since a large majority of them sees that as a much more effective key to long-term planetary peace and prosperity. This divergence has major consequences for the whole concept of “superpower”: Americans think that the key to superpower status is a strong military, while many Europeans want a united Europe to become a superpower in the sense of cultural and economic interaction with the rest of the world, opposing more military spending by either their own countries or the European Community as a whole.

If one broadens the horizon beyond the immediate concerns of war and terrorism, other interesting similarities and differences emerge: Americans are only slightly more supportive of globalization than Europeans, and about half of both Americans and Europeans think that global warming is a high-priority threat. However, 66% of Europeans are opposed to some degree to biotechnology, against only 45% of Americans. Perhaps the largest divergence of opinions manifests itself on immigration: 66% of Americans consider it a threat of the highest level, while only 38% of Europeans agree with that assessment (of course, there are differences among European nations themselves, with Italy being one of the most worried about immigration).

What are we to make of all this? On the one hand, declarations of an insurmountable divide between the US and Europe are obviously blown out of proportion: we are not witnessing the big schism of Western culture just yet. On the other hand, it would be foolish for anybody (and especially for rather single-minded American politicians) to underestimate the areas of divergence between the two major blocks of world democracies. And please, stop telling the Europeans that they should get in line because America saved them during World War II: gratitude is an important value, but wishing to translate it into perennial and unquestioning allegiance is a bit insulting. And one thing nobody needs is to add any additional insult to the dialogue between the two major democratic blocks of the world.

N. 35, April 2003
Whence animal rights?

Do animals have rights? Just posing the question is likely to draw reactions ranging from outright scorn for the idea to very passionate appeals in defense of non-human living species. It seems to me that this is a crucial question because of what it says about how we intend to treat the environment in which we live. Yet, it is a question that opens up endless avenues of discussion that may not necessarily lead one towards a simple answer.

To begin with, as I have argued in this column before, “rights” are not a feature of the natural world, but rather an entirely human construct. That, of course, doesn’t mean they are not interesting or important. Democracy is also a human construct, but its existence or lack thereof affects the lives of billions on the planet. The fact that rights are a human construct, however, means that we cannot appeal to the laws of nature to defend any particular viewpoint about them.

One could then construe the idea of animal rights as reflecting our acknowledgment that we live in a complex world that we share we other creatures, and that these other creatures should not be considered as pure means for our ends (in perfectly Kantian fashion, for the philosophically inclined). I am going to assume that all but the most callous individuals will agree to this rather mild statement. But we are just beginning to unravel the complexity: what should the extent of these “rights” be, to what range of other species should we extend them, and using what criteria?

Clearly, here opinions soon diverge radically. Consider individuals who choose a vegetarian life style in order not to harm other living creatures. There are several styles of vegetarianism, from people who don’t want anything to do with any animal product whatsoever (including eggs, cheese, etc.), to people who are comfortable eating some animals, for example invertebrates (shrimp, clams), or even some vertebrates (fish). Furthermore, the motivations for being a vegetarian may also range enormously. Some feel this is a matter of not using other living creatures for our ends (however biologically justified this may appear to be), while others object to human practices of animal husbandry and are content when eating free-range or otherwise “humanely” raised animals, even chickens.

None of these positions is intrinsically irrational (though some may lead to a few internal contradictions when pushed to the limit), and there doesn’t seem to be a way to decide among them according to purely logical criteria. For example, one common thread emerging from the consideration of the range of vegetarianism is that people seem to apply a rough biological criterion to their choices: the spectrum from vegans to people that eat free-ranging chickens could be interpreted as a continuum along evolutionary time (species that diverged early on from us, like plants, are OK to eat, those more closely related to humans, like most vertebrates, are not allowed). Or it could represent an assessment based on the degree of complexity of each species’ nervous systems (most invertebrates, except squids and octopuses, are really dumb and it is difficult to think of them as having feelings, but dogs and even cats clearly seem to have them).

I am not saying that people consciously think in terms of evolution (heck, remember that about half of Americans don't actually believe in it!) or neurobiology, but they seem to feel that those are reasonable criteria. The difference between different kinds of vegetarianism, and indeed even the one between vegetarians and meat-eaters (actually, omnivores, since nobody eats only meat) then becomes a question of where one chooses to draw the line in the sand of biological complexity. Few seem to want to draw the line at the boundary between the organic and inorganic worlds (i.e., refusing to eat even plants), but anything beyond that is rather arbitrary.

Arbitrary lines in the sand, of course, are not irrational to draw. We do it all the times in our lives, simply because the world is too complex to attempt to live without holding any belief or engaging in any behavior that is contradictory with others we also espouse. The real questions seem to be: first, what criteria should we agree upon to sensibly talk about animal (or human, or plant) rights? Second, and once we have answered the previous question, how do we negotiate as a society where that line in the sand is best drawn?

The problem that many people are likely to find with this approach is that it doesn't fit simplistic positions: vegetarians, for example, can't simply claim that eating animal flesh is immoral without being willing to do the additional work of answering the two questions posed above. They don't get to hold the high moral ground by default (I am aware, of course, that the question of animal rights is much broader than just vegetarians vs. meat-eaters, but this particular debate well illustrates the broader issues). Omnivores, on the other hand, can't just reject the other side's position as silly, or they will logically be faced with uncomfortable questions of their own (so, if it is OK to eat animals, what about your dog? Chimps?)

I don't pretend to have an answer, but I think it is important to pose the questions more broadly and invite a less emotional discussion to take place. For the record, I do eat meat, but I object to the treatment of animals by the large meat-producing companies that run most of the business in modern Western societies.

N. 36, May 2003
On "being proud of"

Lately I have been thinking about the meaning of “being proud of.” It is hard to drive on a highway or walk down a street and not see a billboard or a bumper sticker that says “Proud to be American” or some variant thereof. So I started to wonder what do we mean when we utter or write such a phrase? To begin with, this isn’t something that people do just for the fun of it. Few are patriotic enough to spell out their pride unless they mean it as a message addressing a particular situation. That particular situation, of course, has recently been provided first by the 9/11 attacks, and now by the war on Iraq and the controversy that it has generated, both nationally and -- more dramatically -- internationally.

Even so, I suppose there is no logical contradiction in, say, being proud of being an American and yet oppose preemptive wars because they violate international law. Indeed, many antiwar protesters have made it a point of displaying their patriotism with flags and slogans to reinforce the idea that they don’t think of themselves as “anti-American,” but simply anti-Bush foreign policy. So one can be proud of being an American for many different, sometimes blatantly contradictory reasons.

But more generally, and I don’t mean to offend anybody by asking this question, whenever I see the slogan “Proud to be American” I want to stop the person and ask a simple question: why? Or, more precisely, “what do you mean by that?” Surely there are exceedingly good things that the nation known as the United States of America has done during the course of its history. To name but a few, it created the first modern democratic state based on the principles of the European Enlightenment, it has successfully fought off Adolf Hitler, and has sent a human being on the Moon. Surely these are things to be mighty proud of.

Then again, that very same United States of America has done other things one would more likely be ashamed of, including exterminating entire indigenous populations in the process of building the new nation, engaging in racist policies that have been abandoned only gradually and painfully, and holding the record for being the only nation ever to use a weapon of mass destruction.

Should we as individuals be proud (or ashamed) of these things? Well, we certainly didn’t do them (though we may be taking advantage of some of the outcomes). Let us remember that it is by a simple accident of birth that one is American as opposed to French, or Iraqi. And that most of us don’t actually participate in our nation’s civil life enough to claim any right to brag or be sorry about what that nation does during our lifetime (let alone what it did before we lived). From that perspective, being proud of being an American, French, or Iraqi is downright silly. It would be like being proud of supporting a particular baseball team just because one happens to live in a particular town (oh, right, people do that!).

And yet, I understand the feeling that brings people to cheer for a sports team or a nation. Heck, I religiously watch the soccer world cup, proudly recounting the past and

present feats of the Italian team, even though I have made absolutely no contribution to it. Furthermore, despite the fact that I profoundly dislike any form of nationalism from a rational perspective, I have to admit that I feel at home when I enter a restaurant that serves good Chianti and pasta al dente. Indeed, I caught myself even at being somewhat boastful of the remote history of my country, from the absolute geographical and cultural dominance of the Roman Empire (take that, George Bush!) to the masterpieces of Renaissance artists! But, believe me, in my sober moments I realize that the Roman Empire wasn't exactly a political machinery to be proud of, and that Michelangelo did the Sistine Chapel completely independently of any help from me whatsoever.

What, then, does it mean to be "proud of" being associated with an abstract entity such as a team or a nation? I suppose it is a reflection of the deep need for a sense of belonging that we all have, mixed with whatever imprinting we got from the surrounding environment when we were growing up. There is nothing wrong with that: it is fun to watch sports events with some sort of emotional involvement (not just as "spectators"), and it is even good to feel some degree of cohesion with the society with live in. What is not good is to forget to at least occasionally step outside of our feelings and take a look at the question from a more neutral ground. Then it shouldn't be difficult to realize that other people have just as much right to feel "proud of" being something else as we do, and that we are therefore not entitled to trample all over them with a condescending smile on our face. Is that too much to ask?

N. 37, May 2003/b
Post-war

The war against Iraq is over, and it is time to pause to reflect about a few points that seem to have been lost in the shuffle, as well as a few new issues that are already emerging in the aftermath.

First and foremost, I have heard plenty of people ridiculing the antiwar movement reckoning that, after all, there were very few casualties (on the American side, that is), and that everything went smoothly. This irritatingly misses the point of the antiwar sentiment. Just because things went according to US plans, that doesn't make it right from an ethical perspective, unless one is ready to accept the Machiavellian position that the end justifies the means. Even then, one can still ask if the end is a good one to begin with.

And here is where another common misunderstanding of the peace movement comes about. In that movement nobody ever defended Saddam Hussein. Nobody in his right mind thinks that having an Hussein-like regime anywhere in the world is a good idea. But remember that removing dictators, or even aiding democracy, has never been a real goal of American foreign policy, despite the rhetoric. The US has put plenty of dictators in power when it was convenient for it to do so, even at the cost of overthrowing democratically elected governments (the case of Chile, the murder of its elected president, Salvador Allende, and the ensuing pro-American dictatorship of Augusto Pinochet come to mind).

No, the only real goal of US foreign policy has always been the goal of any nation's foreign policy: "national interest." The trouble is, national interest in this case was defended with the idea that it was justified for the US to wage a war of preemptive action against an hostile government prepared to use weapons of mass destruction. Besides the obvious question of why not applying the same logic to countries that really have been threatening the United States, and that really do have weapons of mass destruction (Korea comes to mind), the fact is that -- so far -- no weapons of mass destruction have been found in Iraq, not even after American troops have taken complete control of the country. Now, this is an empirical matter, and it may turn out that such weapons do in fact exist, but even Bush doesn't seem so sure anymore (was he ever?). Very recently he said that it is possible that the Iraqis destroyed the weapons during the war! Why on earth would they do that? Indeed, why did they not use such weapons against the invading American and British armies? What is it good for to have weapons of mass destruction if you don't use them as a last resort to defend yourself? What did Saddam Hussein have to lose by holding back?

Other interesting things are emerging during the aftermath. The anti-American sentiment is already running high among Iraqis, which -- quite understandably -- are asking themselves why don't the "liberators" go away now that their job of liberating them has been done (perhaps because that wasn't what the liberators set out to do?). In fact, the US is now complaining that Iran is allegedly attempting to "interfere" with the "internal politics" of Iraq, something that the US cannot and will not allow! I wonder if

anybody in the Bush administration even gets the irony of such position. I guess a full scale invasion of another country doesn't count as "interference" with that country's internal politics.

What was wrong with the war on Iraq (and with the possibility of others against Iran, Syria, and Korea, to mention but a few of the other countries that have been casually threatened by one or the other of Bush's officials during the past few weeks) is not that we should condone or protect the dictatorships or repressive regimes of those countries. It is that no other country has the right to act as a self-appointed policeman, circumventing the due process of international law as established by the United Nations. Yes, of course the UN is slow, bureaucratic, and often impotent. But that impotence is largely the fault of the United States, which keeps using the UN whenever convenient, and undermining its authority or cutting its funding whenever the rest of the world doesn't want to follow what the American government decides to do. Not always been able to get one's way is the obvious price of democracy, but the self-declared best democracy in the world doesn't want to pay that price.

Let me try to clarify the problem with an analogy. We have all seen movies in which the police can't do anything to stop a criminal because of the due process of law and its many loopholes and slowdowns. In those movies, there usually is a hero who finally takes things in his (it's normally a male) hands and simply gets the job done, and we all cheer. But in real life, we don't want vigilantes to roam our cities, we prefer the slow and inefficient machine of public justice, and in fact we insist in putting strict limits to that as well. Why? Because once you bypass laws, the only rule is that of might makes right. Today perhaps this may appear acceptable because it happens to be a democratic country that is able to play bully. But what if (when?) the cards on the table will change? Who is going to protect the world from a vigilante out of control? That is why the war on Iraq was and remains wrong.

N. 38, June 2003
It's the fundamentalism, stupid!

At the cost of oversimplifying an overly complex situation, I propose that the major threat to modern democracies is not terrorism per se, but ideological fundamentalism, particularly of a religious nature. Political fundamentalism has now essentially disappeared, at least for now, with Fidel Castro as one of the few pathetic remnants, destined to soon disappear naturally into oblivion, like all mortals.

No, the real problem is religious fundamentalism, and in particular the one rooted in the twin monotheistic branches of Christianity and Islam (with Judaism ranking as a distant third only because it is numerically much less represented worldwide). This is not, of course, because every (or even the majority) of fundamentalist Christians, Muslims and Jews are willing to blow themselves into pieces to achieve a political goal, or because they are all bent toward the destruction of everything and everyone that disagrees with them. Far from it. But the fact remains that fundamentalism of any sort, by definition a form of extremism and therefore ill-suited to live within a democratic and pluralistic society, easily breeds intolerance, self-righteousness, and even more extremes, of which the world has experienced the consequences all too clearly during the past few years.

Let us not make the mistake of dismissing the problem as simply a modern incarnation of the old (and certainly true) observation that political power exploits religious feelings, and that therefore the problem is with the greed for power and with people like Saddam Hussein (or George Bush) who want power and find it easy to manipulate the masses using religious appeals. There surely is part of that going on too, but George W. Bush, I think, really believes that God is on his side, and so do Tony Blair, Hussein, Bin Laden, and a host of other characters that are concurring in making a mess of the just-born 21st century.

The extremes to which Islamic fundamentalists (including Palestinians and their leader Arafat, currently as pathetic as, but much more dangerous than, Castro) can go in the name of their version of the universal truth are well known and need not be belabored here. But the New York Times has recently reported some comments by “mainstream” politicians in the US and Israel that should be chilling to the bone of every rational and truly compassionate human being. For example, Benyamin Elon, a minister with the current Israeli government, has been quoted as referring to cardinal principles of the Palestinian-Israeli accord such as the idea of land-for-piece as “clichés” to be overcome, and has essentially called for ethnic cleansing of Palestinians. As an exponent of the latter as pointed out, can we imagine what would happen if somebody made the same casual suggestion about moving Jews out of their unhappy land?

On this side of the Atlantic things aren’t much better. The extremes of the Christian right are now documented in books upon books, but a recent addition is a declaration by Gary Bauer, of American Values, who said (again quoted in the NYT) that conservative Christians must accept the Abrahamic Covenant as described in Genesis, by which God personally promised the land of Israel to the Jews, and that’s that. Tom DeLay (the

House majority leader) has been quoted in the same newspaper as referring to the West Bank using the biblical names of Judea and Samaria!

It is simply astounding that a species that has conquered space, split the atom, figured out the essentials of where it came from evolutionarily, and has invented democracy, is currently in the hands of a bunch of nut cases who still believe in the literal reading of a book written by ignorant people several thousand years ago! How can we vote into office, support, and take seriously a political class that on the one hand uses computers and airplanes, but on the other firmly believes in the actual existence of heaven and hell, concepts obviously invented by primitive human beings who slaughtered each other with swords and arrows? How much longer are we going to leave the future of the world in the hands of deluded minds who are so sure of their own viewpoint that they constantly affirm God is on their side (on all of their sides, of course)?

I keep hearing of the existence of a “silent majority” of moderately religious people in Western democracies and even among Muslims and Jews, who apparently have a distaste for the outrages of the nut cases that run them. Where is this silent majority? Isn’t it time to wake up and kick these guys out of office (or, if not elected, out of Mosques, Churches, and Synagogues)? The recent worldwide anti-war demonstrations may have been a signal that people are in fact waking up. But let’s keep the alarm clock ringing loud, or Bush, Bin Laden & co. will plunge us all back into the Dark Ages, real soon. And we call them “dark” for reasons other than the fact that electricity hadn’t been invented yet.

N. 39, July 2003
Why skeptic doesn't mean cynic

I am proud to consider myself a skeptic. I run a skeptic book club in town, and subscribe to magazines such as Skeptic and Skeptical Inquirer. I fantasize of being an intellectual descendant, in my small ways, of Scottish philosopher David Hume, who made of “reasonable skepticism” his method of approaching problems ranging from the political to religious.

And yet, I constantly have to battle the prejudice (what else could it be?) that links skepticism with cynicism in the popular culture. Fellow skeptic Michael Shermer was once asked at a radio talk show to which we participated why he seemed such a jovial, easy-going fellow: after all, aren’t skeptics supposed to be constantly begrudging the very existence of the world?

Let’s start with the basics. The Oxford Dictionary defines cynisism as: “1. Tending not to believe in the integrity or sincerity of others. 2. Sceptical. 3. Contempuous; mocking. 4. Concerned only with one’s own interests.” Also according to the Oxford, the word probably derives from a Greek root naming a gymnasium in which the philosopher Antisthenes used to teach. Antisthenes was in fact the founder of the cynic school in ancient Greece, which was characterized by contempt for both pleasure and wealth.

Dictionary definitions, of course, are a mix of prescriptions for the “correct” usage of a term (we better try to use words consistently, or communication soon becomes impossible), and of descriptions of both current fashion and the past history of words. It is therefore interesting to note that while the Oxford lists skepticism as the second meaning of cynical, if one looks up skepticism itself the same dictionary tells a different story: “1. A person inclined to question or doubt accepted opinions. 2. A person who doubts the truth of Christianity and other religions; an atheist,”from the Greek for ‘inquiry, doubt.’

Well, if being skeptical means to doubt accepted opinions, given that the majority opinion is that there is some kind of God, I suppose a skeptic has to also be an agnostic (notice that “doubting” is not the same as “categorically negating”). More generally, though, skepticism seems to me to have a much more positive connotation than cynicism. While I would have admired Antisthenes’ contempt for wealth (I’m not so sure about pleasure), I would not make it a centerpiece of my philosophy. To doubt claims that are not backed by evidence, on the other hand, seems only reasonable. And to attempt to inquire into the soundness of such claims by seeking evidence in favor or against them ought to rate among the highest virtues of rational animals.

Instead, it is difficult to deny that skeptics are perceived at best as party poopers and at worst as permanent curmudgeons to be shun at parties and ostracized in public discourse. Just consider the endless stream of TV shows on such exciting possibilities as extraterrestrial visits, chatting with the deads, or the healing power of prayer. In recent years, at least some of these programs have featured a skeptic (often the above mentioned Michel Shermer, or Paul Kurtz of the Committee for the Scientific

Investigation of Claims of the Paranormal) to provide that most glorified myth of media coverage: “balance.” It turns out, however, perhaps not surprisingly, that the token skeptic attempting to explain the difficulties of conducting controlled experiments on prayer healing will be given a fraction of time, and that the program will always end with a leading question aimed at keeping the “mystery” alive and to prompt the viewer to tune in for next week’s installment.

Worse yet, skepticism is rarely practiced in the very earthly arena of public discourse, especially by media journalists whose job allegedly is to keep us informed and to keep everybody else (CEOs, politicians, ideologues) on their toes. The legendary Baltimore Sun skeptic at large of the first half of the 20th century, H.L. Mencken, may have been a bit too close to cynicism, but his reporting of the infamous “monkey trial” in Dayton, TN in 1925 is still refreshing to read if you are not a zealous fundamentalist. Alas, investigative reporting a la “Murphy Brown” TV series is rare and much needed, not because we live in especially troublesome times, but because we can always use people who ask good questions. (Some) politicians have always lied to the public to get their way, and so have (some) members of the military, some religious authorities, and occasionally even some scientists.

That is why Hume’s reasonable skepticism is vital to our society. It is not a question of not believing others as a matter of principle. Rather, it is about constantly exercising our critical thinking skills to make more informed decisions in our lives and when we go into the voting booth. In an age of weapons of mass destruction that vanish into thin air, victims of crime being blamed for the assaults they suffered, and outrageous claims concerning just about everything being thrown around as gospel on talk shows, it would come natural to be cynical. Instead, a little sane skepticism will do us much good.

N. 40, August 2003
Are we afraid of the wrong things?

I have an acquaintance of mine who tells me that he is worried whenever I get on a plane (which is more often than most people, though I'm not a golden level frequent flier). You know the reasoning: those things (the planes) are heavier than air; we were not meant to be flying thousands of feet above the earth; surely you heard about how the airlines are cutting on maintenance because of increasing costs; etc., etc., etc.

Interestingly, this same friend of mine is not the least bit concerned about the fact that in order to get to the airport I have to drive on a road, Alcoa Highway, that the locals have nicknamed "I'll Kill Ya Highway" because of the high number of accidents. Never mind that the statistics clearly say that riding a car is much more dangerous than being on a plane, that if we were meant to do anything, that probably did not include racing at 60 miles an hour on asphalt, and that there is not an iota of evidence showing that airlines have been slacking on repairs (to the contrary, study after study shows that the airline industry -- including commuter planes -- has become increasingly safe over the past decades).

Are we afraid of the wrong things? That is certainly the thesis of University of Southern California's sociologist Barry Glassner, whose The Culture of Fear: Why Americans are Afraid of the Wrong Things should be mandatory reading for people like my friend. Glassner makes an interesting point, and backs it up with tons of anecdotal as well as statistical evidence. We are more afraid of terrorism than of dying of ill effects caused by the operations of our own industries, and yet the latter is a much higher cause of death than the former. We are convinced by the media that it is very dangerous for anybody to walk city streets because of "random" crime. But, as Glassner points out, violent crime is anything but random: just consider that a black man is 18 times more likely to be murdered than a white woman.

The examples can be multiplied almost endlessly, but a regular pattern emerges. We tend to be afraid of things that are constantly in the news, even though the media have a stake in ratings (and therefore in high-emotional impact stories), not necessarily in informing us. We tend to be unduly impressed by personal stories, either recounted by people we know or broadcasted by talk shows, and often lack the overall frame of reference to reasonably interpret those stories. Surely there are genuine examples of, say, the IRS "persecuting" some poor chap well beyond the boundaries of reasonableness. But does that constitute a pattern of abuse of ordinary Americans by the tax people? More importantly, does that require a special Congressional investigation, and perhaps passing laws to curb such ghastly abuses of power? Maybe, but the answer is to be found in independent investigations of the problem based on large numbers of cases, not on the occasional horror story, as regrettable or even worrisome (nobody wishes to become the next "anecdote") as that may be.

Is there a national conspiracy by the media, the government, and the military-industrial complex to keep Americans worried about the wrong things? Hmm, yes and no. On the one hand, it is simply natural for human beings to respond emotionally to personal

stories and to yawn when faced with statistical analyses. It is also understandable, if borderline unethical, of the media to go for the gory aspects of life, as unrepresentative of reality as they may be, rather than for the more mundane but more relevant ones. Glassner even suggests that perhaps we tend to fear the wrong things because they neatly substitute fears of things for which we either can't do much about or are in fact partly guilty of. For example, it may be that an obsessive interest in the relatively few cases of children killed by their mothers makes us feel better about our own deficiencies in our everyday exercise of the same role (along the lines of "well, at least I'm not as bad a parent as that").

On the other hand, think of the recent and still unfolding story about President Bush "doctoring" the truth about Iraq's nuclear program and why the US went to war. (I'm sure that if it were Clinton denying having received a blow job in the oval office we would not be ashamed of using the word "lying," and perhaps even of thinking out loud about impeachment.) That one does indeed seem a case of the Government purposely manipulating our feelings for rather sinister ends.

Do we have a defense against being afraid of the wrong things? Can we hope to channel our fears where they belong? (After all, fear is a genuinely useful reaction, if directed to genuine threats.) Yes, but the answer is going to make you yawn and wishing to turn the page or jumping into another area of cyber space. The answer is slow, painful, continuous education of ourselves. A process that is mostly up to us, that requires reading widely and discussing openly, that can eat into your TV or golf time, and that would make you more sociable only with the NPR-listening crowd. Then again, perhaps the greatest responsibility of the citizens of a democracy is exactly to educate themselves, if nothing else in preparation for the next trip to the voting booth.

N. 41, September 2003
Are you a bright?

It is time for me to come out of the closet... I am a bright. No, I didn't say "I am bright," that would be too blatant even for my notoriously inflated ego. Rather, I am following the suggestion of Mynga Futrell and Paul Geisert to use "bright" as a noun, not an adjective. Let me explain.

Futrell and Geisert are long-time activists for what most people refer to as secular humanism, freethought, or atheism. They put a lot of effort in defense of the rights of what often are referred to as the "godless," or the "unbelievers." The problem is, look at that list of words I just laid out for you. Most of them have a negative connotation, or sound so threatening that they inspire a knee-jerk reaction from most people, including your neighbors.

"Unbeliever"? But we do believe in a lot of things, except they do not include a benevolent deity looking over our shoulders (and, it seems, particularly interested in what we do in our bedrooms). "Godless"? Would you refer to somebody who doesn't believe in unicorns as "unicornless"? "Atheist"? That, in the classical and most benevolent meaning of the term, means a-theist, without a belief in a deity. But, again, how many people feel compelled (not to mention proud) of labeling themselves as "a-unicornists"?

You get the point. Futrell and Geisert wanted a word to label their beliefs that has a positive feeling, something that could make you proud to say "I am ..." in other people's company, and -- even better -- that would make your company ask: "what's that?" I have to admit that when I came across the bright movement (www.the-brights.net) I was a bit skeptical, and just a tiny bit annoyed at the possibility that the word bright would be used to imply that we are smarter than other people. Yet, reading some of the essays posted on the brights' web site quickly changed my mind. After all, not all "gay" people are gay in the sense of being happy, easy-going fellows, right?

Indeed, part of the inspiration for the name "bright" did come from the consciously positive use of the term gay by homosexuals. The idea is that brights are in fact a bashed minority in this country and around the world, and the last such minority -- at least in Western democracies -- that is ok to bash! President Bush the First is on record as saying that he didn't think brights (he didn't use that term, obviously) are real American citizens, and perhaps should not be afforded the rights that go with that privilege. Bush the Second hasn't been more friendly on that respect. Yet, not even the Bushes dare attack gays or African-Americans, or women (the latter, of course, are not exactly a minority...), at least not in public.

As Richard Dawkins put it in an article on the brights movement published in The Guardian (and I don't often agree with Dawkins, so read this!), it is a matter of raising awareness of the problem. Gays did it effectively during the past decades, so did feminists. Most people are careful these days when using words that imply male chauvinism: we now tend to talk of chairperson, no chairman; we use "she" almost as

frequently as “he” when referring to a hypothetical individual. This may be awkward, or even aesthetically unpleasant, but it means that the problem of sex discrimination has risen to the level of general consciousness, as it should be.

Similarly with brights. A bright is defined simply as a person with a naturalistic worldview. That means a worldview that is free of supernatural and mystical elements, and this worldview extends to ethics and morality. Simple enough, no? Many more people than you think are in fact brights, even though several may not realize it, or may not wish to “come out” (as for gays and feminists). Brights don’t have a common political agenda except when it comes to the defense of themselves as a bashed minority. The same goes for gays and feminists, whose range of opinions on any other subject is as wide as the population at large. What brights want is to be as respected by the community, politicians, and authorities as much as anyone who freely labels herself as a Jew, a gay, a feminist, a Baptist, or a Catholic. Nothing more, but -- crucially -- nothing less.

According to a 2002 survey of the Pew Forum on Religion and Public Life, about 27 million Americans are brights. That’s a staggering number, and they vote! In other Western countries our numbers are significantly higher, and I suspect there are many of us even in officially “Muslim” countries around the world. What on earth makes it right to deride our beliefs and ethical convictions? Why would anybody feel threatened by meeting or talking to a bright? There is no reason, and it’s time to tell the world about it. If you are a bright, go ahead, use the name and talk to people about it. Not in order to “convert” them, but to stimulate their awareness. If you are not a bright, be decent to us, in the same way in which -- one hopes -- you are decent to gays and African Americans even if you are not black and you have a heterosexual orientation. It simply is the decent thing to do.

N. 42, October 2003
Bush, the Pope, and gay rights

George Bush (the Second) has recently called for legislative action to prohibit gay marriages, something that--thanks to initiatives in Canada and a few US states--is becoming a real (and apparently threatening to some) possibility in this country. Bush's position is that he "believes" that a marriage is, by definition, the union of a man and a woman. Ergo, gay marriages are an oxymoron. Of course, one could point out that definitions are arbitrary human concepts (unless they are part of mathematical proofs, which ain't the case here). But that would be pointless, since we all know where Bush gets his belief: from his reading of the Bible, apparently still shared by a majority of Americans.

In this George II is not alone. The Pope himself agrees that gay unions are abominations, but his reasoning is a bit more sophisticated (as one would expect), and yet fundamentally fallacious. John Paul II has stated that the reason gay marriages shouldn't be allowed is because they are "unnatural," and they are unnatural because they do not lead to procreation. Well, it is hard to disagree with the observation that gay unions don't produce biological offspring, although the term "unnatural" hardly applies, because a lot of unions in nature--human and not--don't yield progeny (e.g., bonobos, the pigmy chimpanzees, have sex in order to mend social relationships. If only we would follow such a wise example!). But let us concede for the sake of argument (and only as a purely intellectual exercise) that sex without at least the intent of procreation is "unnatural." To then claim that it should be prohibited because immoral, is a flagrant example of what philosophers call the naturalistic fallacy.

David Hume, in his A Treatise of Human Nature (1739), pointed out that there is no logical connection between what is (in nature) and what ought to be (in human morality). In other words, as both Bush and the Pope would probably readily admit if the point were pressed on them, just because something is not natural it doesn't follow that it is immoral. Surely, flying (in airplanes, as both George and John Paul regularly do) is not natural for human beings, but I doubt either of them is going to call for a ban on air travel on moral grounds any time soon. Closer to the moral realm, although plenty of animals engage in limited forms of altruism--usually directed at close kins--there is no natural equivalent of organized charities, on which the Catholic Church heavily depends, and which Bush thinks is the answer to anything except war.

Ironically, a similar fallacy is sometimes committed by advocates of gay rights. While initially resistant to a biological interpretation of their sexual preferences, sectors of the gay community have recently been emphasizing research purportedly showing that homosexuality has at least in part a genetic component. Such research is controversial (scientifically, not morally) in itself, since it is often based on small samples, and since the genetic component may account for only a fraction of the variation in sexual orientation in the human population. Be that as it may, an homosexual could point to genetical studies to claim that her orientation is part of the biological range of behaviors observable within the human species, and hence "natural." Furthermore, one could argue that if homosexuality is biological, than it makes no more sense to ask a gay

person to “convert” to heterosexuality than it does to pretend that somebody changes race (although, of course, the letter request would be rather unpopular even among conservatives today--gosh, could we really be making progress after all?).

But such biological “defense” of homosexuality is misguided for three important reasons. First, ample research has shown that just because a trait has a genetic basis, it does not follow that it is unalterable by changes in the environment, or through behavioral shifts. For example, we have a natural craving for fats and sugars but, as hard as it often is, we can avoid walking into McDonald’s, by a sheer act of will power. Second, a genetic basis for homosexuality would certainly make it “natural,” but religious conservatives could still argue that it is “wrong” because it is akin to a disease. After all, sickle cell anemia is natural, but it is something to fix, not to brag about.

However, the most important reason not to advocate a biological defense of the gay lifestyle is because one would fall into the same temptation that got the Pope, and against which Hume warned us: the naturalistic fallacy. Again: just because something is natural, it does not follow that it is good. We can determine by observation and study what is natural and what is not. But we need to arrive at moral rules by agreement (when possible), and tolerance (when the alleged “immoral” behavior does not actually hurt others).

Therefore, Bush’s personal beliefs about what “really” constitutes a marriage are (or should be) irrelevant, and the Pope (as well as his Protestant fundamentalist counterparts in the US) has no business deriving an ought from an is. Regardless of what biologists will continue to find out about homosexuality, rational philosophy is the best weapon in the fight for personal sexual choices.

N. 43, November 2003
Edward Teller, Dr. Strangelove

Physicist Edward Teller has moved on, as the ancient Romans used to say, to the Elysian Fields. Good riddance, I say, paraphrasing George W. Bush's comment in another context. Which is ironic, because obviously Bush thought highly enough of Teller to accord him the Presidential Medal of Freedom in 2003, the highest civilian honor in the United States.

Famously, of a different opinion was physicist Nobel laureate Isidor Rabi, who remarked that the world would have been a better place without Teller. E. Teller was a real-life Dr. Strangelove (of "how I learned to stop worrying and love the bomb" memory), the immortal character played by Peter Sellers in the film directed by Stanley Kubrick in 1964. (A Google search revealed that there are three primary suspects for being the inspiration for Strangelove: Henri Kissinger, Werner von Braun, and Edward Teller -- I vote for a nicely split award).

Perhaps Teller's most outspoken critic was Carl Sagan, who wrote a poignant essay on Teller-Strangelove entitled "When Scientists Know Sin" (republished in his The Demon-Haunted World: Science as a Candle in the Dark). Sagan met Teller several times, both in private and in public debate, and -- as a physicist himself -- was in a primary position to evaluate not only Teller's technical work, but also how accurately he portrayed it to the public and to politicians like Ronald Reagan. Sagan reminds us of Teller's advocacy of all sorts of "civilian" uses for the H-bomb (which Teller helped develop and aggresively advocated): from scientific experiments (let's explode one on the moon to analyze the resulting gas and dust and see what our satellite is made of), to -- believe it or not -- construction projects (e.g., to eliminate mountains that may get in the way of roads or dams).

Sagan' take on it is that perhaps Teller was desperately trying to justify to the world his life-long work in nuclear weapons development, truly an attempt to make all of us "love the bomb" (and, by reflection, his chief inventor and advocate). There are also plenty of personal circumstances that help explain Teller's hawkshiness, like the fact that when he was young the communists confiscated his family's property in his native Hungary. That he lost a leg as a result of a streetcar accident, and was in permanent pain throughout the rest of his long life, probably didn't help to soften Teller's character either.

Be that as it may, Teller took advantage of McCarthyism and the paranoia that swept the US during the first phases of the cold war, to attack his colleague Robert Oppenheimer (who coordinated the Manhattan Project that had led to the development of the atomic bomb) for being too soft as well as disloyal to the United States. Oppenheimer's crime, in Teller's eyes, was his critical stance on the further development and use of weapons of mass destruction, tough Oppenheimer was joined in his campaign by many leading scientific figures of the time, most famously Albert Einstein.

Teller's academic life was also rather controversial. While he was called the "father" of the H-bomb, there is good reason to believe that his original idea was flawed and would not have worked without substantial revisions carried out by many people working under him. When Sagan and other scientists discovered the possibility of a "nuclear winter" following the launch of a thermo-nuclear attack (even without retaliation), Teller both claimed that the science underlying the nuclear winter scenario was flawed, and that he had discovered the possibility several years earlier, but did not alert the public or politicians about it.

Now, what sort of monster can stumble on a discovery that could very well annihilate humankind, or at the very least cause the death and suffering of hundreds of millions of people, and make the unilateral and private decision of not sharing such discovery with the rest of the world? The sheer arrogance of such an attitude is hard to comprehend, although it would fit very well with the current administration's policy of secrecy and military aggression (it may not be a coincidence that one of the many good things President Clinton did not do was to award Teller the Presidential Medal of Freedom).

In Kubrick's movie, in response to President Merkin Muffley's (also played by Sellers) question about why the "Doomsday Machine" can be automatically triggered, but not manually untriggered, Strangelove answers with perfect il-logic: "Mr. President, it is not only possible, it is essential. That is the whole idea of this machine, you know. Deterrence is the art of producing in the mind of the enemy the fear to attack. And so, because of the automated and irrevocable decision-making process which rules out human meddling, the doomsday machine is terrifying. It's simple to understand. And completely credible, and convincing." That is the sort of 'reasoning' that Teller advocated in real life, and which brought us the hydrogen bomb and Star Wars (not the movie). Teller is finally now gone, but his twisted logic is still endorsed by the Hawks currently usurping the White House, and the War Room is as busy as ever. It is most urgent that each one of us contribute to write a different finale to this movie than the apocaliptic one Kubrick chose for his fictional version.

N. 44, December 2003
Israel, anti-semitism, and world peace

This past October, the European Union conducted one of its routine surveys of what its citizens think of various political and social issues. The results, in this particular case, generated an outcry by many conservative politicians at the way the survey was conducted, and even at the alleged motivations of carrying it out to begin with. The problem? One of the statistics emerging from the EU survey is that 59% of Europeans rank Israel as the number one threat to global peace.

Israeli politicians have immediately denounced the survey as an example of anti-semitism, and many European leaders (mostly on the right of the political spectrum) have joined the chorus of outrage. According to the Italian newspaper La Repubblica, Nathan Sharansky, Minister for the Hebraic communities of the Diaspora, has commented that political criticisms of Israel are a thinly veiled form of anti-semitism, and that "as in the past Jews were considered like the Devil, responsible for the world's evils, so today the 'civilized' world attributes the world's problems to the Jewish state, Israel."

And yet, it is hard to see how the EU's survey was "tendentious" and slanted against Israel. One of the fifteen questions asked respondents to rank a total of twelve nations in accordance to the perceived degree of threat they pose to world peace. The list of nations inclunded not only Israel, but Russia, North Korea, Iran, Iraq, Afghanistan, the United States, Pakistan, India, and the European Union itself. Israel came out ahead of everybody (especially in the Netherlands, with a whopping 70%), followed in decreasing order of perceived threat by North Korea, Iran, Iraq, Afghanistan, and the United States.

Now, my own rankings would have been quite different. (If the reader must know, I would have put Pakistan first, since it is a non-democratic nuclear power; followed by North Korea and Iran, because they are run by nutcases who could potentially develop nuclear weapons; then would come the United States -- also run by a nutcase with nukes, but at least it is a democracy; finally, to consider Afghanistan a threat to world peace is, I think, simply not to understand what a threat to world peace is.) Indeed, I don't believe that Israel is dangerous at the global level, although certainly it hasn't helped the middle east peace process of lately. Then again, the latter has stalled largely because the United States insists in not behaving as an honest broker: without US support, Israel would simply have to agree to whatever peace plan would be put forth by an American administration or the United Nations (and, I add, it would be about time, too).

What I think is interesting is the use of the "anti-semitism" charge on the part of the Israeli government to shield its policy toward the Palestinians from criticism, a policy that can only be defined as fascist -- as in consisting of the application of brute force with complete disregard to human rights or international law. Most Europeans are not anti-semite, and they have repeatedly demonstrated so with continuous aid to Israel for the past several decades, with countless amends to the victims of the Holocaust, be that monetary in nature or more generally through books, articles, plays, movies, and all

sorts of other recognitions of the horrors of Nazi Germany and fascist Italy. And so it should have been. But it is a travesty to use the sympathy generated by the Holocaust to render a government immune from international criticism. Israel stands almost alone in the world (except for the support of the United States) for good reasons to be found in its own Holocaust-like behavior toward other religious or ethnic minorities.

Another twist to the European-Israeli saga came in November, when Gianfranco Fini, the head of the Italian neo-fascist party (Alleanza Nazionale, National Alliance -- have you noticed how right-wing extremists always play the patriotic card?) decided to visit Israel and to publicly denounce Mussolini's errors in supporting Hitler and establishing "racial" laws in the 1930s. It was a rather gutsy thing to do, even though it came with more than half a century delay. Well, that got Alessandra Mussolini, the dictator's granddaughter and a major exponent of Alleanza Nazionale, enraged, accusing Fini of "betrayal" of the party's "ideals"; she immediately left Alleanza Nazionale and established a "true" fascist party. It seems that an honest neo-fascist can't afford to have even a minimum of conscience these days... To complicate things, of course, Fini was welcome in Israel by what is in fact a fascist party of its own (with respect to its treatment of Palestinians), which makes for an almost unbearable degree of irony in the whole story.

The point is, however, rather simple. The Holocaust was, in fact, one of the most horrific events in human history, and there is absolutely no justification for it at all. On the other hand, it was done to people and by people of another generation, and those of the current one simply should no longer apologize for it (since they haven't done it) or use it as a shield to then feel free to commit human rights abuses of their own.

Europeans are right to be critical of Israel, not because it actually is a major threat to world peace, but because it is acting in an increasingly despondent and despicable manner against largely defenseless people. This is so close to what the Jews themselves suffered at the hand of the Germans, that it is hard to conceive how they don't see the striking parallels and immediately stop what they are doing. A tragedy like the Holocaust generates an enourmous amount of human sympathy, but sympathy cannot (and should not) be infinite, and the current Israeli government is simply squandering such capital without gaining much for its people. Doesn't anybody learn anything from history?

N. 45, January 2004
On tolerance vs. respect

Most of us citizens of democratic countries would agree, at least in principle, that tolerance for other people's ideas and customes is a positive value. A subset of us would also agree that respect for other people's ways of thinking should ideally be an integral part of the ethos of a free society. I disagree about the latter, and I'd like to briefly explore the difference between -- and the limits of -- the too often confused concepts of tolerance and respect.

While it is possible to think of tolerance and respect as synonims, or at least as tightly linked to each other, I am going to argue that while respect implies tolerance, the other way around is by no means assured. I think that being tolerant means something akin to "live and let live"; for example, I am tolerant of the Ku Klux Klan in the sense that I am not going to push for outlawing explictly racist groups (as is the case, for example, in Canada), as long as they don't advocate violence against minorities. Does that mean that I have respect for a view that considers blacks as inferior to whites? Hell no, I despise everything the Klan stands for, and I have a real hard time comprehending how any decent human being could possibly conceive of belonging to such a group. That, I think, makes the distinction between tolerance and respect as clear as I can muster to explain.

The example of the Klan also immediately clarifies why one can tolerate something without respecting it. A second or two more of considered thought should elucidate why, on the other hand, respect does imply tolerance. It is hard to imagine that one can respect some ideas, say the right of a woman to seek abortion, and not tolerate its actual practice (that is, demanding laws that restrict or eliminate the possibility of a woman to obtain an abortion).

Now that I have established the framework of my discussion, let us get a bit more detailed about the nuances of both tolerance and respect. To begin with, it seems to me that one is under no obligation of respecting any set of ideas one profoundly disagrees with. So I don't feel the least bit guilty for not respecting republican politics (I think it tends to be motivated either by greed or by a grossly misconceived notion of human flourishing) or religious belief (because it worships an imaginary being and pretends to derive from it a universal moral code, often with the urge to impose it on others). When my republican or religious acquaintances (or casual readers) get "offended" at my attitude of "disrespect" they are missing an important point: I tolerate them (as I should, believing as I do in democracy and a liberal society), but that doesn't shield them from criticism, even of a satyrical flavor.

What about tolerance? Are there ideas and customes that should not be tolerated, even by members of a liberal society? Yes, plenty. The practice, common in some societies, of operating on a young girl's clitoris so that she will not feel sexual pleasure as an adult is barbaric, and cannot and should not be defended as simply another "cultural custom." It is wrong for the simple reason that it hurts an innocent human being who is in no position to understand or oppose what is being done to her. There are many more

obvious instances of things we shouln't tolerate, of course (say, terrorism), but I think that examples like cliterectomy bring the limits of the concept into sharper focus, because not everybody in our society agrees that such a practice is barbarian. Heck, many of my liberal friends even recoil from the use of the term "barbarian" when referring to another society. Sorry, folks, but I think that Iran is currently stuck in the late Middle Ages, and I make no apologies for stating it -- which I don't mean as a compliment.

Finally, what about tolerance and respect for individuals, rather than ideas? I think that the same considerations can be applied to people holding some ideas as to the ideas they hold. After all, ideas don't exist outside people's minds, last time I checked. If I tolerate, but don't respect, what the KKK stands for, my tolerance extends to its members, but I sure am under no obligation to respect the latter any more than the former. There is, however, an important difference between ideas and individuals, in the context of this discussion. An individual can hold a despicable idea in perfectly good faith, which may entitle the individual to respect, even though one may not wish to grant that status to the idea (it follows from everything I said above that both the idea and the individual should be tolerated). For example, I have a good friend who is a republican; I have little respect for many of her political ideas, but she is a very good person, and means well, so not only I respect her, but I consider her a dear friend.

However, this asymmetry between people and ideas can work the other way around. Some people may hold ideas that are worthy of respect (or even of outright endorsement), but they themselves may fail to meet the conditions necessary for being respected. For example, consider someone who lies and manipulates others in order to achieve a good end. Unlike Machiavelli, I may cheer for the final outcome, but I wouldn't invite the person in question to dinner at my house (which is why I am glad of Saddam Hussein's fall, and still wish with all my being that Bush not be re-elected in '04 -- no contradiction at all is involved here).

Tolerance, therefore, is not and does not imply respect, and the relationship between the two is much more nuanced than seems to emerge from many instances of public discourse in our society. Next time you watch Bill O'Reilly, please feel free to tolerate the existence of Fox News, but also to relish in utmost disrespect for both Bill's ideas and for him as a person, considering the willful lies he abitually dishes out to his audience.

N. 46, February 2004
What's wrong with the Palestinians?

In the past I have written columns critical of the Israeli government and its actions against the Palestinians. As it was perhaps predictable, I have therefore been accused of anti-Semitism by some readers. This month is the turn of the Palestinians to be considered rationally speaking, and I can't wait for the mail I will find in my box after this column. Oh well, at least I am an equal opportunity offender.

Historically, of course, the Arabs' behavior against Israel is easy to condemn: they engaged in wars with the stated purpose of annihilating the state of Israel, a goal which was part of the charter of the Palestinian Liberation Organization (the pertinent articles have been abrogated in 1996, as part of the peace process facilitated by US President Clinton). While it is certainly true that Israel as a modern state came about in a way that, shall we say, wasn't exactly Kosher (because of the political and diplomatic mess caused by the British occupation), it seems to me that any group of people who elects as their main goal the destruction of another group of people cannot be considered with too much sympathy.

Furthermore, PLO leader Yasser Arafat has perhaps been the worst thing that ever happened to the Palestinians, clearly been much more interested in cultivating his ego and consolidating his meager power, then truly worried about the fate of his people. Indeed, the recent power struggles at the top of the Palestinian administration between Arafat and whoever happens at the moment to be so foolish or naive as to think of being able to open a new chapter in Palestinian history, have become symbolic of the permanent stall of the "peace process." That new chapter will be opened, one is forced to conclude, only after Arafat will be gone because of the natural biological decay that eventually overtakes every human being (the same, it appears, will have to be the case for Cuba and Castro -- though the latter has done significantly more for its people than Arafat has done for the Palestinians).

It is also true that, for all the (perfectly justified) call for independence from Israel, the Palestinians are the only Arabs living in a democracy, and they are enjoying its fruits while at the same time invoking the help of sinister characters like the now deposed Saddam Hussein, Libya's Muammar Gheddafi, and the Saudi's royal family -- none of whom is particularly well known in the world for encouraging free speech. Indeed, when Palestine will be an independent state (and I am confident that this is a matter of when, not if), its people will have some hard choices to make in terms of form of government -- choices that may truly influence (hopefully for the better) the rest of the Arab world.

But the Palestinians have another, much more urgent, choice to make right now: they need to make up their mind whether to pursue nationhood within the respect of the United Nations charter, or to continue to use terrorism as their alternative diplomatic tool. Let me be clear on two things here. On the one hand, I in fact think that there really is no choice: the Palestinians have to outlaw their violent Islamic group and incarcerate their leaders, the sooner the better. On the other hand, I am not here condemning terrorism in all forms and for all purposes (boy, is this going to cause some

angry e-mails!). The United States of America was established out of what were initially terrorist actions against the British crown. Italy, my native country, started its own independence movement around the middle of the 19th century with an underground group of patriots called the “carbonari” (coal men, because of their habit of going around always dressed in black). The carbonari are patriot heroes for the Italians, but they were (justly) considered terrorists by the Austro-Hungarian government then occupying Italy.

What I am suggesting is that terrorism is simply the way poor people wage their wars: if you don’t have tanks to roll into town, you can always throw a bomb at a vehicle full of your oppressors. However, terrorism -- like war -- is justified only under extreme circumstances, and only for as little as possible. While the Palestinian circumstances may at one point have called for violent action against Israel, they certainly have ceased to do so for many years. Ever since the international community (and in particular the United States), as well as a majority of Israeli themselves, have started to see a Palestinian state as eventually inevitable, suicide bombers have only delayed that long-waited moment to hasten which they have irrationally agreed to tear themselves into pieces.

The Palestinian people, then, are on the brink of an historic moment (in fact, they have been there for several years already). They are currently torn between two opposite forces that are attempting to bring them towards completely different directions. On the one hand, the terror of Islamic fundamentalism; on the other, the hope for the first Arab democracy to emerge by choice (the Iraqi one, if there ever will be such thing, is being imposed from outside -- something that is much more unlikely to work in the long run). Palestinians simply cannot go both ways, and they must make the choice now, before yet another external power is going to make it for them, leaving them to live with whatever the consequences would be for generations to come.

N. 47, March 2004
Open letter to Colin Powell

Dear Mr. Powell,

like most Americans of either political persuasion, I think you are a fundamentally decent person, principled, and honest. Heck, I would have liked to see you as the first American Vice President with a Democratic ticket (this country apparently isn't ready for a black or a woman President, though many other democracies have jumped through at least the latter hoop on the long road to civilization).

It is therefore with sincere hope that I ask you to formally resign from the Bush administration before the upcoming elections. That, of course, would help the American people put in perspective a President who ran a campaign as a "compassionate conservative," only to clearly demonstrate that he is neither (he is not treating gays or Haitians with compassion, and the ballooning deficit that he created makes it clear that he sure ain't fiscally conservative).

More importantly, your resignations would help the rest of the world avoid four more years of an administration bent on destroyng the environment for economic gain, on demolishing nations to score cheap political points, and on risking the destabilization of international finances just so that a crooked minority of rich people can get just a tinsy bitsy more rich than they already are.

However, the fundamental reason for you to resign is because you are a decent man, and resignation at this point is the only decent thing to do. Mr. Powell, most Americans believed you when you went to the United Nations, sticking your neck way out in order to substantiate Bush's case that Iraq was a clear and present danger to the US, that Saddam Hussein was building an arsenal of nuclear and biological weapons (you know, nothing compared to what the US already has, but that's another matter...), and that he was also somehow connected with Osama Bin Laden's Al Qaeda operations.

A year after the beginning of the war we know beyond reasonable doubt that Iraq was not a direct threat to the United States, for the simple fact that there are no detectable amounts of weapons of mass destruction on Iraqui territory. Moreover, it is true that Al Qaeda is now connected to Iraq, but it is the American invasion and the fall of Hussein that has created that connection, in yet another example of alleged good intentions gone bad in American international policy (other examples include the funding and political backing of both Osama and Saddam, when it was convenient to do so against the Soviet and Iranian threats respectively -- I particularly like that photo of Don Rumsfeld shaking hands with Hussein, back in 1983).

Of course, intelligent observers did have serious doubts about your show at the United Nations to begin with. I mean, simply pointing to fuzzy dots on a satellite image and saying "see? Here, this is a chemical weapons factory!" did seem a bit far fetched even then. I, for one, didn't believe you for a second. But there was your perceived honesty and integrity that did leave some reasonable doubt that you could be, after all, right.

Well, you were not, and it seems to me that the only decent thing to do at this point -- if you really are as honest and deserving of respect as I still think you may be -- is to admit that you and Bush were wrong, and leave the latter to face the consequences.

Yes, I know, you have been saying that surely no decent person can regret the departure of Hussein and the liberation of Iraq. I completely agree on the first point, though the second one will depend greatly on what will happen there during the next few months (you don't really think that an Iran-style theocracy would be an improvement, do you? And yet, at the moment that seems the most likely outcome of upcoming democratic elections).

But that wasn't why you and Bush (and Cheney, and Rumsfeld, and the rest of that fine gang) advocated war. If it were a matter of losing American lives and jeopardizing American international prestige in order to liberate oppressed people, why start with Iraq? Pakistan or North Korea would have made much worthier targets, especially considering that we know they have nuclear capability. Not to mention other crooked countries, such as Saudi Arabia (remember that Bin Ladin and most of his followers come from there, not from Iraq?), or Iran (look at what sham the "democratic" elections have been there very recently).

No, what you said to the world that fateful day at the United Nations was that the reason for the US to invade Iraq was that Hussein was working toward developing the capacity for direct nuclear strike on America. He wasn't, you were wrong, and honest people of integrity admit their mistakes and try to amend the consequences, if possible. It is the decent thing to do, Mr. Powell.

Hopefully Yours,
Massimo Pigliucci

N. 48: April 2004
Intellectual midwifery

The philosopher David Hume allegedly once said that “truth springs from arguments amongst friends” (I have actually been unable to source this quote). Perhaps, and yet many Americans don’t think it is polite to engage in arguments with other people on anything worth discussing, like politics, sex or religion (this doesn’t include fundamentalists engaging in “witnessing,” which isn’t a discussion at all, but rather an aggresive monologue to save your soul).

Even should one be lucky enough to join a discussion group (on the Internet or, more rare and precious finding, in flesh and blood at the local bookstore or coffee house), it seems like people simply talk past each other, using the other person’s time at presenting her views only to catch their breadth and begin thinking what to say next. I know because I’ve been guilty of precisely such behavior when I was younger, obviously motivated more by the urge to parade my knowledge, or to “convince” my opponent, rather then... well, rather then what? What exactly *is* the purpose of discussion supposed to be?

Let us go back to the first written record of people engaging in discussions of a philosophical bent: Plato’s dialogues allegedly reporting what Socrates said to his interlocutors. Socrates often explains that his role is that of a philosophical midwife, not to tell people what the truth is, but rather to help them get out the truths that are already inside them. For example, in *Theaetetus*, Socrates tells the title character: “Well, my art of midwifery is in most respects like theirs; but differs, in that I attend men and not women; and look after their souls when they are in labour, and not after their bodies: and the triumph of my art is in thoroughly examining whether the thought which the mind of the young man brings forth is a false idol or a noble and true birth.”

Today educators world-wide still think of the “Socratic method” as the best way to teach: not by lecturing students, but by engaging them in a discussion that leads the students to a better understanding of the matter at hand. What is left out of the modern version is another important aspect of Socrates’ approach: that the teacher stands to gain as much as the pupil. Again, from *Theaetetus*: “And therefore I am not myself at all wise, nor have I anything to show which is the invention or birth of my own soul, but those who converse with me profit.”

Now, I actually doubt that Socrates was as ignorant as he professed to be, or that he had as much to learn from his interlocutors as they from him. The same doubt should reasonably be raised in the broader case of any teacher-student relationship (after all, if you don’t know anything more than your students do, what business do you have in teaching them?). However, Socrates’ attitude applies perfectly to the way we should all approach discussions with peers, if we wish to learn something from the activity, and incidentally to avoid coming across as insufferable know-it-alls (once again, I speak from personal experience...).

Come to think of it, here are some of the best reasons why we should engage in discussions to begin with: 1) To better understand our own positions; nothing shows us our contradictions and limitations as to have to clearly explain what we think to somebody else. 2) To better understand our interlocutor's thinking, to see if there is something good in it (Socrates' "noble and true birth"), or to find better ways to challenge his mistaken ways (Socrates' "false idols"). 3) To involve and stimulate additional people to think and to participate in the dialogue. It isn't only that discussions with more than two participants are more fun and likely to be more informative; more importantly, informed dialogue is at the core of a functional liberal democracy. 4) To keep our own mind open to change; changing your mind on something important is a liberating experience, not to mention one that is likely to dramatically improve both your sense of self-esteem and your standing with your friends or colleagues.

Notice that the obvious objective missing from this list is what most people take to be the only or chief goal of engaging in a discussion: to change one's "opponent's" mind. That may happen as a side product of attempting to achieve the four aims referred to above, but more likely than not this will occur only over a long period of time, not instantly in the middle of the dialogue. After all, discussions aren't religious experiences, and changing one's mind shouldn't be akin to a conversion. Rather, we need to digest the arguments advanced against our point of view, think of possible counter-arguments, try the latter out on different people, read some more about the issue at hand. Only *then* we can feel justified in changing our opinion, rather then simply be bullied into submission.

And remember, as Thomas Babington (1800-1859) wrote in his *Southey's Colloquies*, "Men are never so likely to settle a question rightly as when they discuss it freely."

N. 49: May 2004
Liberal vs. illiberal democracy

Plato famously did not like democracy. He saw the death of his mentor, Socrates, decided by an ignorant and fearful mob of Athenians, as the logical consequence of giving power to the masses. While Plato's solution to the problem, his utopia of a state guided by philosophers (surprise, surprise) depicted in the *Republic* obviously wouldn't cut it neither in theory nor in practice, he had a point.

Churchill once quipped that democracy is the worst form of government, except for all the others, which reflects the attitude of most in the modern Western world. And yet, Churchill, unlike Plato, failed to define what *kind* of democracy he was referring to. Roughly speaking, there are two fundamentally distinct kinds of democratic government: the simple rule of majority, despised by Plato but simplistically endorsed by many in the United States; and a constitutional democracy, in which the decisions of the majority of the moment are constrained by a set of rules aimed chiefly at protecting the rights of minorities, including freedom of speech and action.

Author Fareed Zakaria, in his lucidly written *The Future of Freedom*, labels the two kinds respectively "illiberal" and "liberal" democracy. By "liberal" Zakaria doesn't mean left-leaning (as he is quick to point out), but rather constructed so to insure an open society, encouraging a healthy liberal exchange of ideas among its citizens, and tolerant of a wide (though obviously not boundless) spectrum of beliefs and practices.

This distinction is crucial, and yet it is rarely drawn by our politicians, who use the word "democracy" as synonymous with unquestionable good, despite plenty of evidence to the contrary. Indeed, Zakaria convincingly argues that -- under certain temporary circumstances -- a reformist autocracy may be preferable to an illiberal democracy. He points out that the most successful instances of transition to democracy in the world throughout the 20th century have developed gradually, beginning with relatively enlightened autocratic leaders who saw the eventual inevitability of change. Soviet Russia comes to mind, and China may represent the next big example.

On the other hand, democracy has notoriously failed in many instances in South America, and especially in Africa. That, claims Zakaria, has been because the transition was sudden, with little if any constitutional protections. The results have been disastrous, leading to massacres of dissenting ethnic or political minorities, and often to the raise of a brutal dictator favored by an urgent need of reestablishing "order."

Zakaria's book was written before the US-led invasion of Iraq, but his points apply remarkably well to the current situation in that country. Of course, nobody would ever think of Saddam Hussein as an "enlightened" dictator, but it is also obvious that the Iraqi's concept of democracy -- if indeed they do have one -- is of the illiberal type. The Shiite clerics who are pushing the country to the brink of civil war want immediate elections, even though clearly the minimum necessary conditions are not in place. Why? Because they know they would easily win a majority of the votes, which would pave the way to the establishment of a *democratically elected* theocracy in that country.

Not exactly what the so-called coalition of the willing had in mind when they embarked in one of the most ambitious operations of nation building ever attempted (and led by a US president who campaigned against the very idea of nation building). Then again, dictators have come to power by (illiberal) democratic means before, just think of Hitler.

Perhaps the most disturbing aspect of Zakaria's argument is that the US itself may be moving toward an increasingly less liberal form of democracy. Many of the guarantees put in place by the Founding Fathers and embedded in the American Constitution are being eroded, or are increasingly under attack by a politically and religiously conservative (slight) majority. For instance, the US Constitution guarantees a separation of church and state, and yet Americans are increasingly undisturbed by the encroaching of government upon religion (just think of the popularity of "faith-based" initiatives, school vouchers, etc.), and stubbornly hold to clear symbols of breach of the wall of separation (such as the phrase "under God" in the pledge of allegiance, or "in God we trust" on the paper currency).

All of this is done in the name of democracy, adopting the narrow meaning of the term according to which if the majority (even as slight as 51%) wants something, it should be done. This is precisely what led Plato to reject the democratic model to begin with, and what differentiates successful democracies from abysmal failures. I doubt we will see another Socrates being put to death anywhere in the Western world, but it is significant that intellectuals, or simply independent thinking lay people, are under increasingly vicious attack in the US for simply having the guts to voice their dissent regarding the Bush administration's foreign or domestic policy. We have gotten to the point that being religious, right-wing, pro-war and patriotic are all seen as synonymous, simply because a narrow (and narrow-minded) majority of Americans currently sees it that way.

It is also astounding to see that the right to marry (i.e., to be legally recognized as a couple) is being denied to gays and lesbians by people including those (e.g., some blacks) who until very recently had been discriminated against in their turn by a bigoted majority. The obvious problem with illiberal democracies is that majorities can change, sometimes dramatically and over a short period of time. That is why it is in the long-term interest of *every* member of a society to defend the rights of the minorities. Next time around, you may be the one to need such protection.

N. 50: June 2004
Soldiers' morality

It has been an awful month in Iraq, dominated by the news of prisoners' abuse in detention facilities run by the US and its allies, by the decapitation of an American, broadcast on the Internet, and of course by the usual list of bomb explosions and casualties all over the Middle East. Plenty of commentators have remarked on all these events, but I have made a list of what I think are interesting phrases related to the prisoners' abuse scandal, and that I'd like to submit to the readers' attention. What I think is relevant in the following quotes is what they reveal about the common sense of morality that appears to be shared by a lot of us. As we shall see, it makes for a disturbing picture of our ethical standards.

One of the first excuses adduced by the accused soldiers and their friends and families is a classic: "I (he/she) was following orders." Well, all right, what that means is that responsibility needs to be ascertained throughout the chain of command, but in what sense is this an excuse for the soldiers' behavior? It didn't help the Nazi at Nuremberg whenever they tried the same approach, and for good reasons: when an adult individual does something, even at the prompting of somebody else, that individual is primarily responsible for what he has done. In the United States, it is common to try children as adults for all sorts of crimes, and one often hears calls for the death penalty in some such cases. But when it comes to our own "boys" (and "girls") doing awful things, all we have to do is to point the finger to whoever gave the order? What happened to one of the cornerstones of the American ethos, personal responsibility?

A second common refrain heard during the past few weeks has been that "they were not properly trained." As if a mature adult actually needs special training to figure out that it is not moral to torture prisoners of war, that it is not ethical to humiliate people that are in one's custody, for example by forcing them to engage in acts that their culture or religion considers demeaning. On a much minor scale, of course, a similar attitude is behind the idea that if someone at the office sexually harasses one of his employees, the problem will be fixed with "sensitivity training," as if any reasonable man wouldn't know that touching, or even talking to, a woman in a certain manner without permission is simply not an acceptable thing to do.

Many of the friends and family of the accused soldiers have been understandably shocked and surprised at the news of the abuses. But, rather than accepting the reality of photos and testimonies, a common reaction has been along the lines of "he is such a nice boy, I simply can't believe he could do that sort of things." This, of course, is the same simplistic attitude that explains why the majority of crimes are committed by people who know the victim, the latter being simply unable to think that her nice uncle, neighbor, or friend could possibly do what they in fact went on to do. In several of the televised interviews with friends and family of the accused soldiers, the attitude was palpably not just one of disbelief at the reality of the events, but rather one insinuating the possibility that somebody, somewhere, was simply making all of this up.

To continue with our brief analysis, consider Donald Rumsfeld, the (too) briefly embattled Secretary of Defense: he immediately went on television to “take full responsibility” for the abuses, and then gingerly (even contemptuously) ignored calls for his resignation. What *exactly* does it mean to “take responsibility,” then? I thought, naively as it turns out, that it would mean that someone at the top of the chain of command (say, Rumsfeld) would resign because he had not been able to correct a problem of which he had been aware for months before the scandal erupted. But I guess Mr. Rumsfeld’s dictionary includes some other, hitherto unknown, definition of “taking responsibility.”

We then come to President Bush, who has been quoted saying, after viewing the photos of the prisoners’ maltreatment, “this does not reflect the America I know.” Well, the problem is that -- contrary to what Mr. Bush and his cronies have been saying for years -- there is no such thing as “the” America they know. The United States of America is, like many other places in the world, sometime a wonderful and sometime an awful place to live, depending on the circumstances. Americans, like any other people in the world, don’t have a monopoly on goodness (or on evil, for that matter), but are simply a bunch of human beings, with all the great potential and faults that human beings typically have. That is why it is equally silly to say that one is “proud to be an American” (how can one be proud of a birth accident?), as that one “hates America” (how can one meaningfully hate an abstract entity?). Rather, one should say that one is proud, ashamed of, or even hate, *particular* Americans, especially individual leaders and the policies they implement.

The Bush administration also tried to get some mileage out of the alleged fact that the US is “dealing” with the matter openly and swiftly, as opposed to some dictatorship that American blood has helped eliminating. Right, except of course that that dictatorship had actually been helped into place by the same American interests that later removed it, not to mention the maddening fact that the Bush administration tried to keep the news of the abuses out of the public eye for months, while at the same time doing absolutely nothing to stop the practice. Only when the news finally became public Rumsfeld “took responsibility” (see above).

Lastly, one of the most disturbing comments I’ve heard in the news about this whole horrible affair began appearing after the decapitation of Nick Berg was broadcast on the Internet: “well, see, at least we are not as barbaric as they are.” Yes, there is no question that the decapitation of a human being is a barbaric act (although, let us remember that the US is the only Western country that still applies the death penalty -- being killed by raw decapitation is surely worse than being fried on the electric chair, but at some point this becomes an academic matter for the person involved). And surely decapitating one prisoner outdoes abusing several by a long shot (then again, at least one prisoner did die under torture in American hands). But even to make the comparison, it seems to me, dramatically lowers our own moral standards. So now the US is no longer a knight in shining armor, interested only in bringing democracy and economic prosperity to the rest of the world. We are reduced to a picture of the US army doing awful things, yes, but at least not as awful as those of the other side. Have we completely lost our moral compass? Did we ever have it to begin with?

N. 51: July 2004
The neurobiology of regret

Will biology ever be able to explain the human mind? Some embrace such possibility with eagerness, considering it (correctly) yet another blow to mysticism and religious thinking. Others, for the same reasons, very much fear any hint that science is moving in that direction, desperately resisting a naturalistic interpretation of human thought.

Most (but by no means all) philosophers of mind -- while fiercely debating where a naturalistic answer to the problem of mind may come from and what form might it take -- have settled on what is often referred to as the “no ectoplasm clause.” In essence, this says that regardless of what *else* may be involved in producing consciousness, feelings, and thoughts, these simply cannot happen unless there is a live brain into the picture.

The no ectoplasm clause is, naturally, shared also by scientists looking into these questions, and recently a group of cognitive scientists have made spectacular progress in the understanding of one of the most characteristic and interesting human emotions: regret. The paper by Nathalie Camille and colleagues, published in the May 21, 2004 issue of *Science*, focused on the analysis of regret in normal people when compared to individuals with lesions in a particular area of the brain known as the orbitofrontal cortex. They chose this brain region because it is known to be connected both with areas involved in reasoning and planning (such as the dorsolateral prefrontal regions), and with those devoted to emotions (like the amygdala in the limbic system).

Why are reasoning, planning and emotional reactions important to the study of regret? Because the latter is known to be an emotion triggered by another peculiarly human (as far as we know) mental characteristic: counterfactual thinking. At the most sophisticated level (say, philosophical analysis), counterfactual thinking is what allows us to “run” thought experiments in our mind. More commonly, it is the ever-present “what if” part of everyday thinking which plays a crucial role in evaluating different possible scenarios following some action that we are considering taking (or not taking). More speculatively, counterfactual thinking may have been crucial to the survival of early humans, allowing them to *plan ahead* important aspects of their lives, such as group hunting.

Regret, then, emerges from the feeling of disappointment when we contrast the actual outcome of our actions to some possible (more favorable) outcome that our counterfactual thinking allows us to imagine (the question of whether such counterfactual scenarios are themselves reasonable or not is an entirely different matter). That is why Camille et al. studied regret in people with damage to the orbitofrontal cortex: the hypothesis was that these individuals, unlike normal human beings, would be able to experience regret, because their cognitive and emotional pathways were uncoupled by the brain injury.

The cognitive scientists tested their hypothesis by exposing normal individuals and damaged patients to a gambling scenario on a computer. After each trial, the subjects were asked to rate their own emotional reaction to the outcome (on a scale from very

unhappy to very happy), and they were also measured for physiological markers (skin conductance) of disappointment and regret (the latter two are distinct reactions, the first of which does not involve counterfactual thinking).

The results were as clear as one could have hoped for: disappointment (learning one had lost the gamble) turned into the stronger emotion of regret (when one acquires knowledge of what would have happened if one had chosen the alternative action) in normal individuals. Patients with orbitofrontal damage, however, experienced disappointment, but no regret whatsoever, in accordance with the hypothesis that -- while still interested in the outcome of their gamble -- they were incapable of emotionally processing counterfactual thinking.

The authors of the study concluded that: “It is the counterfactual thinking between the obtained and unobtained outcomes that determines the quality and intensity of the emotional response ... The absence of regret in orbitofrontal patients suggests that these patients fail to grasp this concept of liability for one’s own decision that colors the emotion experienced by normal subjects.”

The science brings us up to this point, at least at the moment. But philosophy allows us to speculate a bit further (while still grounding ourselves in logic and evidence, of course). For example, one can begin to wander if the occasional vicious monster who commits hideous crimes and bluntly shows no regret for what he has done, doesn’t have something wrong with his orbitofrontal cortex. This is an eminently testable hypothesis, thanks to modern brain scanning techniques. If we also consider recent findings about certain types of brain damage affecting human’s ability to engage in moral reasoning (e.g., de Oliveira-Souza, *Neurology*, vol 54, p. A104, 2000), we are inevitably led to questions about the limits of moral responsibility, the reasonableness (or lack thereof) of punishment, and how much elbow room (to use philosopher’s Daniel Dennett’s famous metaphor) we should reserve for free will. These are deep questions at the interface between science and philosophy, and both disciplines are providing us with much better tools than classical mysticism or supernaturalism to understand important aspects of what it means to be human.

N. 52, August 2004
Changing our mind: a Bayesian approach

I am often accused by people who don't know me very well of never changing my mind and always wanting to be right. These charges are usually hurled at me in the midst of some heated debate, often when the other side is close to be running out of defensible arguments. While I find the accusation of wanting to be right rather comical, considering that it is being advanced by somebody who is in fact trying to convince me that *he* is instead right on whatever we are discussing, the charge of not changing my mind is more serious. After all, I think of myself as a reasonable person who is interested as much in learning as in teaching, and surely such attitude -- if entered into honestly -- must at least occasionally lead me to admit that I was wrong on something, and therefore to change my mind.

Sure enough, once I started paying attention to the issue, I discovered that I have changed my position on several issues over the years. This doesn't happen very often, and the change is rarely dramatic. But both of these characteristics are to be expected if one puts a lot of thought into shaping his own opinions: changing them too easily is the sign of a mind so open -- as Carl Sagan once said -- that the brain is about to fall off! What is more interesting, however, is that I began to give some serious thought to how exactly we change our mind about things. This is a crucial subject for anybody seriously interested in social discourse (or in advertisement and propaganda, the dark sides of the same coin), and sure enough has received a fare share of attention by both philosophers and neurobiologists (see, for example: Epstein, R.L., 1999, *Critical Thinking*. Belmont, CA, Wadsworth, or Gazzaniga, M.S., 2000, "Cerebral specialization and interhemispheric communication. Does the corpus callosum enable the human condition?" Brain 123: 1293-1326).

An interesting way of looking at how we change our mind, supported by recent neurobiological evidence, and in good agreement with my reflections on my own experiences, is provided by what is called the Bayesian framework (see RS n. 20, January 2002). Bayesians think of our understanding of truths about things in terms of probabilities based on evidence. So, for example, suppose you are a scientist testing different anti-AIDS drugs. You may start out with no a priori knowledge of which drug works better, and therefore you don't have any reason to prefer one to another. The Bayesians would say that the *prior* likelihoods of the drugs being effective are, at this point, equal. But then you begin your research, collect data, and gradually see that a couple of the drugs seem to be effective, one or two more hardly make any difference, and one even has detrimental effects. Accordingly, you adjust your estimate of the likelihood of success of each drug based on the data, what Bayesians called the *posterior* probabilities associated with each drug's effectiveness.

The key here is that you may never know for sure that one drug is working, or that another isn't. What you do is to constantly re-adjust your posterior probabilities as a function of more and more evidence. In other words, you keep your mind open to change opinion as more data come in. Notice, however, that Bayesian theory also predicts that, if in fact one or more of the drugs are *truly* more effective, with time your

posteriors will stabilize to attach high likelihoods to the good drugs and low likelihoods to the poorly performing ones. After that, only dramatically different new information is likely to change your mind (alter your posteriors) on that subject.

A similar process, I think, is used by our brains on any subject to which we apply our mental powers. Often we do not start with flat priors (i.e., with equal probabilities assigned to each alternative being considered), becase our opinions are influenced in a more or less subtle way by our social milieu. If you are raised in a conservative religious family, you are much more likely to simply adopt your parents' beliefs than to question them (though occasionally too strong of a parental hand catalyzes an outright rejection), so your priors are very much in favor of, say, a Biblical god, as opposed to a mainstream god, deism, or atheism. If you are impervious to new knowledge coming in (say, because your upbringing was characterized by strong conditioning), you may indeed never change your mind.

But now suppose you get on the Internet, begin frequenting the local public library, go to secular or at least not strictly religious high school and college. Floods of constrasting information and opinions begin to enter your brain, and it begins to process all that information automatically, whether you like it or not. Your innate thought processes work like a Bayesian calculator, constantly re-adjusting the posterior probabilities and, in the process, more or less gradually changing your mind. Your conscious self will monitor this subconscious process, and the change of opinion may feel almost instantaneous, like a "conversion," or "the light bulb going off."

I'm not saying, of course, that our brains are perfectly rational computers that -- like a natural Bayesian algorithm -- always converge to the best estimate of posterior probabilities possible given the available evidence. We have plenty of reasons to believe that this is, alas, not the case. Nonetheless, viewing the process in Bayesian terms helps, I think, not only accounting for its general nature, but also for some interesting features that can be used to improve our critical thinking. For example, the best way to effectively adjust our posterior probabilities is to take in as much reliable information as possible, and from as many different sources as possible. Hence the value of reading, discussing, and generally engaging one's thoughts all the time, on whatever subjects one thinks are important. Your innate Bayesian calculator will not only allow you to change your mind as often (or as rarely) as necessary, but will make sure you have the best possible view of what is (likely to be) true or not.

N. 53, September 2004
Monty Python's guide to philosophy

Secular humanists are often accused of not espousing a "positive" philosophy, of simply denying the existence of the supernatural while resigning themselves to a meaningless and joyless life. Indeed, I was once a guest on a radio talk show together with *Skeptic* publisher Michael Shermer, when the host incredulously observed that we seemed to be pretty happy people "for being skeptics." I don't know where this stereotype comes from, other than the deeply entrenched prejudices of people who think that there is meaning in life only if somebody up there shows a keen interest in the details of their sexual practices. But I know how to once and for all debunk the myth: let us briefly examine the obviously humanistic philosophy embodied in the work of one of the most happy-going groups of people I've ever come across, the British comedians collectively known as "Monty Python" (Graham Chapman, John Cleese, Terry Gilliam, Eric Idle, Terry Jones, and Michael Palin). My analysis will be confined for the moment to the Monty Python (henceforth, MP) songs, leaving a detailed study of their movies and TV productions to a more appropriately academic venue.

Every philsophical analysis needs to start with good questions, and MP does just that in the appropriately titled *The Meaning of Life* (from the homonymous movie):

> "Why are we here? What's life all about?
> Is God really real, or is there some doubt?"

And as any good philosopher would do, MP does not provide us with simplistic, canned, answers, but rather with alternatives to seriously ponder:

> "Is life just a game where we make up the rules ...
> Or are we just simply spiraling coils,
> of self-replicating DNA?"

Which shows an understanding of both the problem of relativism in morality and of Richard Dawkins' concept of the selfish gene.

Monty Python does appreciate alternative, even religious, viewpoints, as we can evince from several passages of *Every Sperm is Sacred* (from the movie "The Meaning of Life"):

> "I'm a Roman Catholic,
> and have been since before I was born
> And the one thing they say about Catholics,
> is they'll take you as soon as you're warm ...
> You don't have to have a great brain ...
> You're a Catholic the moment Dad came."

Which implies a view of sex that one can find developed at length in several Encyclicals by various Popes, or can be clearly summarized in MP's system as:

"Every sperm is sacred
every sperm is great
If a sperm is wasted
God gets quite irate."

However, one could argue, make fun of God all you like, but in the end isn't it rather obvious that He is responsible for the beauty of creation, arguably one of the most important things that give meaning to our life? This is, of course, the well known argument from design, presented at length, for example, by William Paley in his 1831 book, *Natural theology: or, Evidences of the existence and attributes of the Deity, collected from the appearances of nature*. Naturally, David Hume had already debunked the argument in his 1779 volume, *Dialogues concerning natural religion*. Hume, pointed out that one needs to consider not just the good stuff that God allegedly made, but also the rest. Which MP summarizes very eloquently (and in a lot fewer words than Hume) in *All Things Dull & Ugly*:

"All things sick and cancerous,
all evil great and small,
alla things foul and dangerous,
the Lord God made them all."

Never was the argument from evil against the existence of God more aptly presented. But MP does not limit itself to what Francis Bacon called the *pars destruens* of their philosophy. They go on with a *pars construens* by elaborating an alternative viewpoint based on what one could think of as the cosmic perspective. Consider, for example, the *Galaxy Song* (from "The Meaning of Life"):

"Whenever life gets you down, Mrs. Brown ...
Just remember that you're standing on a planet that's evolving
and revolving at 900 miles an hour ...
In an outer spiral arm, at 40,000 miles an hour
of the galaxy we call the Milky Way."

But why -- you may ask -- would astronomy matter to our sense of everyday life? Obviously, because it helps to:

"... remember when you're feeling very small and insecure
how amazingly unlikely is your birth."

Which doesn't mean the cosmic perspective avoids scathing social criticism:

"And pray that there's intelligent
life somewhere up in space
Because there's bugger all down
here on Earth."

Despite such apparently negative view of humanity, the optimistic character of Monty Python's brand of secular humanism emerges most clearly in *Always Look on the Bright Side of Life* (from the movie "Life of Brian"). Consider, for example, the following exortation:

> "If life seems jolly rotten
> there's something you've forgotten
> and that's to laugh and smile
> and dance and sing."

So much for humanists being a joyless bunch! And the song doesn't lack deep philosophical forais, as in:

> "For life is quite absurd
> and death's the final word ...
> Enjoy it -- it's your last chance anyhow."

Not to mention this quintessential, and rather mathematically accurate, summary of human life:

> "I mean -- what have you got to lose?
> You know, you come from nothing
> you're going back to nothing.
> What have you lost? Nothing!"

Something to ponder, the next time that road rage is about to overcome you because yet another jerk on an SUV cut you off without using a turning signal.

N. 54, October 2004
Abortion, a philosophical approach

I have often remarked in this column that philosophy gets an unfair bad wrap on the ground that it doesn't *solve* problems. Indeed, the point of philosophy is more to clarify concepts, ideas, and their consequences, then to solve practical issues. However, it would seem that clarifying things isn't much of a goal if in turn it doesn't help us make some progress. So, let us consider one particularly sensitive debate -- the one about the very idea of abortion -- where philosophy, by claryfying our thoughts, can help reasonable people come to a compromise (philosophy can do nothing for unreasonable people, so if you are among those who scream "murder!" at the thought of someone masturbating, get a life, and while you're at it, make a point of watching Monty Python's *Meaning of Life*).

Much of the debate on abortion hinges upon what seems to be a scientific question: when does a fertilized egg become a human being? Of course, the answer cannot be entirely scientific, since it depends in part on objective facts about the biology of human development, and in part on what we mean by "human being." Which is where philosophy comes into play. Does a foetus become a human being when the heart starts beating? When there is a recognizable central nervous system? When it can react to external stimuli? When it can feel pain? Any of those answers would put the boundary between unacceptable and acceptable abortion practices at different times during pregnancy, but it seems rather arbitrary to pick one of these developmental milestones and use it as a universal yardstick for moral decisions. After all, many other animals have a nervous system, a heartbeat, respond to external stimuli, and can feel pain, but most of us (vegetarians excluded -- but most abortion opponents included) don't seem to have too many qualms about killing such animals.

No, the crucial point must focus on something else that characterizes human beings. Plenty of philosophers, for example Julian Baggini (in his excellent collection *Making Sense: Philosophy Behind the Headlines*) have suggested that the important facts in the debate on abortion (and the parallel one on euthanasia) are not found in the biology of humans, but rather in our (philosophical) concept of personhood. In other words, some of us think a foetus should be protected because it is becoming a *person*, i.e. an entity that can eventually feel not just pain, but suffering; that can have not just the urge to have sex and reproduce, but may fall in love; a being that could one day write a sonnet, a song, or a philosophical essay.

If the problem is actual or potential personhood, not the developmental biology of our particular species of primates, then we have moved from biology to philosophy, a much more tricky terrain to navigate. Being a person is tightly linked to having the ability to lay down and recover memories (which make up our "identity" as a person), as well as to experience emotions (like love and suffering) and not just feelings (like sexual urge and pain). These characteristics are in turn dependent on being a member of a society, interacting with others, communicating one's thoughts and receiving and understanding information about other people's thoughts and emotions. Yes, all of this is *also* a matter of biology (after all, these things are made possible only by the presence of certain

biological essentials, like a functional body, and especially a complex brain), but taken together they mean that personhood is most of all a question of psychology and sociology.

The problem is that there are plenty of circumstances in which a human being is not, in fact, a person. Foetuses are not persons, and neither are people who survive in a vegetative state induced by a coma. Other cases are more difficult to determine, but one can make a reasonable argument that very young children are only on their way to become persons, while patients affected by advanced stages of some mental diseases like Alzheimer are well on their way *out* of full personhood. So, while there is very little question that by performing an abortion we are in fact killing a biological being that belongs to the human species, it is an entirely different -- and much more difficult to defend -- proposition to say that we are killing a person.

Abortion opponents may shrug all of this philosophical quibbling as irrelevant on the ground that the procedure -- at whatever stage it is practiced -- kills a *potential* person. But this is a rather odd argument, with far reaching consequences that should be seriously considered by whoever proposes it. For example, the mass of cells in question will become a person only if many conditions other than biological development are fulfilled, including being raised in a proper physical, psychological and social environment. It is ironic, therefore, that we spend so much energy debating abortion while most of us are much less passionate about more apparently mundane issues such as, say, health care and education for all those non-aborted foetuses.

Even more radically, if a fertilized egg is a potential person, so is every single *unfertilized* one, and every sperm as well. After all, the egg or sperm only needs a gamete of the opposite type to begin the developmental process that will lead to the generation of another person. I suppose that is why the most rabid religious fundamentalists (including the current Pope) are against masturbation or sex that doesn't have the goal of reproduction. But it is hard to see what these people could do to avoid the natural "waste" of unutilized human eggs. Should we explant them from every woman and fertilize them artificially? If your intuitive answer was "no," and yet you are against all types of abortion, you may want to consider the consistency of your philosophy.

Do I have a better and clearer solution to offer that can help us settle the abortion debate once and for all? No, as I acknowledged at the beginning, that isn't the point of a philosophical discussion. Quite the opposite, I hope that people reading this column will feel a bit less sure of their own positions because they have understood that the issue is much more complex and difficult to settle than a simple slogan, or even an introductory course on human developmental biology, allow. And please do check out that Monty Python movie I mentioned in the beginning.

N. 55, November 2004
I, robot

No, this column is not about Isaac Asimov's famous science fiction novels concerning the interaction between robots and humans (and even less about the recent movie by the same title, very loosely based on said novels). Rather, this month's essay has been inspired by the reading of Antonio Damasio's *Looking for Spinoza*, the third in a series of books by this neurobiologist that attempts to unravel the mysteries of consciousness (the other two are *Descartes' Error* and *The Feeling of What Happens*).

One of the most recurring instances of anti-naturalistic prejudice is the refusal to admit that the mind is a result of the activity of the body; no ectoplasm needed, as philosophers of mind put it. Few today would reject the notion that the body itself is very much like a machine. I was reminded of this rather obvious conclusion during a recent trip to the dentist: listening to a mechanical tool working its way through my teeth in order to fix the problem (I was having a root canal operation) it occurred to me that there was little difference between my predicament and a mechanic working on my car. This is a rather novel conception of the human body: before the work of philosopher-scientist Rene` Descartes in the 17th century it would have been inconceivable even for most scientists to think of the body as a machine.

But the mind, still most people say today, is an entirely different matter. After all, Descartes himself stopped short of extending his reductionist analysis to human thought (though it isn't at all clear whether he did so out of genuine conviction or as an attempt to avoid the fate of his contemporary Galileo). Yet, consider the following instance, reported by Damasio in *Looking for Spinoza*. A group of neurosurgeons at a hospital in Paris was conducting a farly routine operation on a patient affected by Parkinson's disease. The idea was that, since the woman wasn't responding to drug treatment anymore, the medical equipe would go straight into her brain and stimulate via electrodes specific regions of the brain stem. The procedure usually yields stunning results, which completely erase the symptoms of the disease, greatly improving the patient's quality of life, at least temporarily.

In this particular instance, however, something went wrong. When one of the electrodes was activated, the patient suddenly stopped talking, began looking very sad and started crying uncontrollably, eventually explaining how her life was meaningless and she wished to die. It is important to note that the individual in question had never shown symptoms of depression before the implantation of the electrode. Even more stunningly, the talk of suicide, the crying, and the sad expression all decreased and then disappeared minutes after the electrode was removed by the medical scientists! If this doesn't sound like a machine being turned on and off at will by a simple electrical stimulation, I don't know what will convince you.

A crucial reason why Damasio is interested in cases like the one of the French woman affected by Parkinson's lies in the exact sequence of events and what it tells us about the nature of human thought. Notice that the facial signs of sadness appeared first, followed by the crying, and only significantly later by the articulation of the feeling of

emptiness and despair. The same sequence has been found in other experiments and it suggests that feelings are generated by the brain's thinking about, or perceiving, the body's emotions. That is, emotions are simpler physical phenomena, while feelings are more complex, second-order, mental events.

Still not convinced that we are very sophisticated biological machines, in both body and mind? Then consider another fascinating example from Damasio's book. One of his own patients was affected by a bizarre and rather disturbing condition, which provides a stunning insight into the mind-body connection. The man in question suffered occasional episodes during which he would begin to loose the feeling of the lower parts of his body, as if under local anesthesia. The loss of feeling continued gradually upwards throughout the body, until it reached the throat, at which point the man passed out. A similar condition affecting a female patient did not cause her to loose consciousness, despite the frightening experience of no longer feeling her limbs and trunk. Tellingly, this second patient retained a sensation of her internal organs. Damasio suggests the intriguing possibility, based on these and similar cases, that we have a mind only until we have a body sensation of some sort (even highly incomplete, as in the case of the second patient). However, no body immediately means no mind. What more compelling evidence could there be that dualism is dead in its tracks?

Damasio goes further, and in his book he builds a convincing, if circumstantial, case for the radical idea that the mind actually *is* a monitoring system of the internal and external state of our body. The mind, then, is not a *thing*, but a process (of the brain, and hence the body) by which certain animals with complex brains keep track of and control what their bodies are doing. We seem to be well on our way to truly explain consciousness as a biological phenomenon. All of this, of course, is no reason to think that we are "just" robots in the demeaning sense of being "mere" machines having no intrinsic value. There is nothing trivial or simple about the working of the human body and mind. Moreover, human life has value for other humans, and scientific evidence of the kind I discussed here is meant to help us understand how we generate, literally, our selves, not to tell us how much we should value those selves from an ethical perspective.

N. 56, December 2004
Dude, this *is* your country!

Well, the US presidential elections are now behind us, and a lot has been written and said about them. Nonetheless, I couldn't resist adding my own little commentary on what happened and, more importantly, what we (unabashed liberal progressives) need to do in the near and long-term future. Bear with me, I promise not to return to Bush in this column for at least a few months...

First, let us understand what happened: barring the real possibility of local electoral fraud, this time George W. was in fact elected by a majority of the American public. While it is true that this was a narrow majority (which doesn't give him any "mandate" at all), it is also true that Bush would have lost by a landslide in every other Western country (except Poland, apparently). Moreover, since the Republicans gained seats in both the House and the Senate, it is clear that we are witnessing yet another shift of the national political mood toward the right. Even had Kerry won, he would have been paralyzed by a Republican-controlled Congress. So, this was no fluke, but the continuation of a worrisome trend that we need to recognize.

Second, and more importantly, *why* did this happen, despite worldwide protests against the war in Iraq, the lies of the Bush administration about weapons of mass destruction, and the less obvious but nonetheless clear enough failure of accomplishing in Iraq whatever the US was officially poised to accomplish (see the still deteriorating security situation, for example, together with the increasingly mounting number of American casualties)? Many reasons can be brought to bear, but the overarching conclusion must be that, at the moment -- and contrary to what implied by the title of Michael Moore's latest book -- dude, this in fact *is* our country! Or, as many commentators have not tired of pointing out, two countries: the blue and the red. We need to be careful, however, because as much as it is fun (and largely justified) to poke fun at the bigotry, racism, and lack of cultural development of the red states, it is also true that there is a large number of liberals living there, not to mention the even larger number of conservatives living in the blue states. America is a more complex quilt than simplistic national maps may lead us to believe, and this is a factor that may play in favor of either side over the next few years, depending on how the cards of the game are going to be played by the two major parties.

The reds won for a variety of reasons, of course, which include (but are certainly not limited to) the fervent patriotism of most Americans (my country, right or wrong), the fear of terrorism that the Bush administration has played so well, the blatant lies that the Republican campaign has piled up through the use of external groups (see the "swift boat veterans" debacle) or by cunningly crafting their own camping messages (*he* is a flip-flopper, *my* changes of position are the result of leadership), and of course Karl Rove's brilliant use of the "gay marriage" issue in the battleground states. The latter is particularly enlightening, considering that the two candidates did not, in fact, differ on that issue: both Bush and Kerry were against gay marriages, and both favored (grudgingly, in the case of Bush) some sort of legal recognition of gay couples. Americans were simply not paying attention.

The other cluster of reasons why the Republicans carried the day, of course, is the sheer stupidity of the Democrats. How many more lost elections do we have to go through before we understand that -- at the moment -- there is no way that a charmless Senator from the northeast is going to be elected? We need somebody like Bill Clinton: from the south, with no record of “flip-flopping,” and capable of faking a true understanding of bigots and cultural morons at least as well as Bush does. Sorry, it ain’t pretty, but the stakes are simply too high to take yet another chance (which means, I’m sorry to say, no Hillary Clinton to run in 2008!).

Third, what are we going to do about it? Well, liberals have to understand that we need both a viable short-term tactic and a winning long-term strategy. For the short-term, as I just mentioned, Democrats need to play up whatever winning personalities they may have among their ranks. We need people like Clinton and Cuomo to bring back some sanity into the White House (and to the rest of the world). The Democratic party also needs to realize that Republicans usually don’t play fair: they will strike below the belt whenever possible. The best way to deal with this is to aggressively go to the American public and point that out. Most Americans don’t like viciousness, and they’ll see it when it is brought right up to their nose.

But more importantly we need a long-term strategy to damp some blue in the south and midwest. This is going to take decades, not months. The Christian right is correct: we are in the middle of a cultural war (worldwide, not just in the US), and the stakes are as high as civilization as we know it (would you like to live in a theocracy? No? Then get your butt off the couch, because it will happen to *you*!). Democrats need to do their part by pushing public education, battling every judicial nomination, getting young and poor people to realize that voting is a duty, not just a privilege. Perhaps most importantly, liberals need to have the guts to explain to the American public that the Christian right’s world view is fundamentally oppressive and unfair, and that going with Pat Robertson isn’t the only way to be religious (or endorsing George W. the only way to be patriotic). Unjust wars, poverty, lack of education and health care *are* moral issues, and they are much more important than what people do in the privacy of their bedrooms. Brace yourself, it’s going to be a long trench war, with plenty of casualties and harsh times ahead, and -- unlike what happens in Hollywood movies -- a happy ending isn’t assured at all. It’s up to us to make it happen.

N. 57, January 2005
Nonsense on stilts, an example

Philosophy is supposed to be about clarifying concepts and bringing rigor and critical thinking to the analysis of complex problems. Socrates, for example, thought of himself as a philosophical midwife, helping people bringing into the clear what they really believed by questioning them until they were aware of the contradictions in what they thought. Unfortunately, much technical and popular philosophical writing seems to do exactly the opposite, with authors indulging in statements that equivocate and obfuscate matters, resulting in the regrettable propagation of much nonsense. As an example, I will comment on a recent article by John-Francis Phipps on the philosophy of Henri Bergson, which appeared in *Philosophy Now* (October/November '04). I am picking on Phipps not because his article is worse than many others, nor because Bergson's ideas are particularly bad, but simply because it just happens that I'm writing this column during a trans-Atlantic flight, and my most obvious example of nonsense on stilts (as philosopher Jeremy Bentham famously referred to shaky reasoning) was Phipps' essay.

Phipps starts out with an unequivocal example of purely rhetorical statement: he says that he read Bertrand Russell's critique of Bergson and found that it "provided unconvincing reasons to justify his [Russell's] prejudice." Why was Russell's opinion of Bergson a "prejudice," rather than an informed opinion based on the examination of the Frenchman's philosophy? When people begin their attacks with rhetoric rather than substance, one can smell more nonsense coming up, and I was not disappointed just a few lines further into Phipps' article. Bergson, apparently, started out his career being "wholly imbued with mechanistic theories" (his words), and as we all know this quickly leads to the cold and unfriendly view of the world and humanity promoted by science. Fortunately, Bergson saw the light and produced a new theory of time as soon as he recognized "to my [Bergson's] great astonishment that scientific time does not *endure*" (original italics). Come again? What does it even *mean* that time does not endure?

If Bergson had simply pointed out the difference between time as conceived by science and psychological time as perceived by human beings in the course of their lives (the starting point for his doctoral thesis), all would have been well -- if a bit dull. But he had to go on and claim that the mechanistic time of science is (as Phipps summarizes) "based on a misperception: it consists of superimposing spatial concepts onto time, which then becomes a distorted version of the real thing." The trouble is that science does not have any such concept of time at all. In science, and in particular according to Einstein's theory of relativity, time is a dimension of the fabric of the universe, akin to the three classical dimensions of space (and to a few more that we cannot perceive directly, if more recent physical theories are correct). Indeed, Bergson publicly debated Einstein on the question of time, and soundly lost (except in Phipps' view, since he claims that "there aren't really winners or losers in any debate about time" -- a sweeping generalization that is simply handed to us with no argument to back it up).

Phipps then moves on to Bergson's conception of the relation between mind and body. While indubitably the Frenchman had several interesting things to say on this (as on

much else), he proposed an entirely unhelpful analogy, which Phipps takes to be a deep insight. This mistake is so commonplace in much popular philosophical, scientific, and especially mystical/new age literature that it is worth quoting the paragraph in its entirety; Bergson says: “As the symphony overflows the movements which scan it, so the mental/spiritual life overflows the cerebral/intellectual life. The brain keeps consciousness, feeling and thought tensely strained on life, and consequently makes them capable of efficacious action. The brain is the organ of attention to life.” What? Once again, what does this *mean*? If Bergson is telling us that it is the brain that allows animals to keep track of and react to events in the world that may affect them, this is a truism that requires no particularly deep philosophy or science. If one tries to unpack the terms embedded in the paragraph in search of a deeper meaning, one immediately runs into a quagmire that Phipps doesn’t bother to clarify (presumably because the stunning insight is, well, so stunning!). For example, why is mental equated with spiritual, and cerebral with intellectual? Is the mental somehow supposed to be separate from the cerebral? Can we have a mental life without a brain? But you can see how my mechanistic prejudice clearly shows through...

Phipps correctly points out that Bergson’s best known work is his 1907 book, *Creative Evolution*, in which the concept of “vital force” is put forth to “explain” why living beings are fundamentally different from inanimate matter. Any modern biologist who hears about vital forces automatically reaches for his gun, but this isn’t because of a mechanistic prejudice: the fact of the matter is that saying that living beings are different from rocks because the first have a vital force that the latters lack explains precisely nothing. It is the same as “explaining” the motion of objects by saying that they are compelled by the moving force, or that someone got sick because his health left him. Duh. This, incidentally, is the problem with much (if not all) mystical or non-scientific “explanations”: they sound deep and insightful, until one applies a modicum of critical thinking and scratches just below the surface, to find simply an empty and useless tautology.

Phipps reaches the apotheosis of nonsense toward the end of his article, when he speculates on what sort of world we would live in if we had paid more attention to Bergson, abandoned our ill-conceived scientistic prejudice and whole-heartedly embraced Bergson’s “greater respect for all expressions of the life force.” What a world it would have been! Apparently (with no argument to butress his speculations, of course), Phipps thinks that “by now we would have had an environmentally-friendly form of global politics ... Political and economic priorities would by now have changed dramatically and war would be seen as an absolute last resort ... There could therefore be no question of any nation, however powerful, embarking on pre-emptive wars against any other nation.” And so on.

Wow, and all of this didn’t happen because we insist on science and its despicable reductionist attitude! Never mind, of course, that in this so-called scientific era, and in the most scientifically-minded country in the world (the United States) about half of the population believes that the earth is 6,000 years old; moreover, it is apparently irrelevant to the argument that both the 9/11 attacks and the counter-attack against Afghanistan and Iraq have been informed not by science and reductionism, but by the

sort of mindless “vitalism” butressed by non-sequitur arguments that is so similar in structure (although, thankfully, not in effects) to new age thinking and the sort of philosophy that Bentham referred to as “nonsense on stilts.” I am no friend of radical reductionism, and I am mindful of the limitations of science as a tool to understand the real world. I would also not deny that the realm of human experience is much richer than a purely scientific framework can account for. But this does in no way justify sloppy thinking, obscure metaphors, and an anti-science attitude that is all too common in this era supposedly overwhelmed by scientific thinking. Please, let’s get off the stilts and pay more critical attention to what we (and others) say!

N. 58, February 2005
God did it, or did He?

In 1755 a great earthquake struck the city of Lisbon, in Portugal. As a result, roughly 100,000 people died, in the process sparking a new debate about an old and deep theological dilemma: if (the Christian) God is all-powerful, all-knowing, and all-good, how could this happen? The answer, such as it is, has always been that we simply can't understand how such calamities fit into God's plan, but they do, so we should simply have faith in the supreme being and not be as "arrogant" as constantly questioning His plans.

Of course, any human being who deliberately causes the death of thousands, regardless of the stated motive or "higher" purpose, is branded as a horrible criminal, hunted down and prosecuted to the full extent of human law. Rational people feel rather frustrated by this sort of nonsensical double standard, and one defense against the irrationality of the world is, as Mel Brooks once said, a good sense of humor. If anything good came out of the Lisbon earthquake was that it inspired the French philosopher Voltaire to write what became a classical masterpiece of world literature, *Candide*. In it, Voltaire makes fun of the simplistic attitude that we live "in the best of all possible worlds," as affirmed by one of the main characters, Dr. Pangloss (loosely based on the philosophy of Leibniz), and clearly implied by theological "explanations" of natural disasters.

Recently, I have witnessed two more examples of "Pangloss' syndrome," one in response to an event publicized throughout the world, the other while attending a religious gathering celebrating a rite of passage. The scopes of the two episodes are wildly different, and yet they reflect the same irrational, and highly dangerous, attitude about what happens in the world and why.

The largest event was, of course, the tsunami that caused two hundred thousand people to die in southeast Asia. For several days after the tragedy there was a serious debate in the media, eerily similar to the one that moved Voltaire's pen: how could God allow such a tragedy to occur? Christian theologians, Jewish rabbis, and Muslim clerics all gave the same answer: we don't know, but it must have been for a higher good. Some of these self-appointed experts about nothing went so far as to claim that perhaps the people who died were in fact somehow unworthy, and that the tsunami was God's punishment for their sins. A colossal and outrageously insulting instance of blaming the victim, if ever there was one! It is hard for me to imagine the degree of mental gymnastics that one must perform in these cases to save one's cherished pet religious views. This sort of events must cause an almost unbearable degree of cognitive dissonance, and one has to be particularly skilled at fooling oneself in order not to perceive the sheer absurdity of the whole plot. And yet, it seems to work for hundreds of millions of people the world over. This attitude "explained" Lisbon, the tsunami, the 9/11 attacks on the US, and essentially anything else bad that happens in the world: it is either our own fault, or it is for the pursuit of God's inscrutable (but certainly supremely good) plan.

The same bizarre logic applies in reverse, of course: just in the same way as God is never responsible for anything bad happening to us, He takes all (or most) of the credit whenever something good happens. A good gig if you can get it! The second example I witnessed falls into the category of “God did it (because it’s good).” I was at a religious ceremony celebrating an important rite of passage for a young girl, followed by a feast at which everybody was having a jolly good time. At one point, the father of the girl took the microphone and told us a very poignant story: his daughter had actually been born very prematurely, and both her and her mother had barely survived the ordeal. Moreover, the girl had been in desperate conditions in the hospital after birth, and the doctors had little hope that she would make it. However, some doctor had the daring and brilliant idea of trying a new experimental drug, after having asked the parents’ permission. It worked, and the result was the beautiful young woman that we were now celebrating.

Had the story ended there it would have been a wonderful and moving tale of human compassion and ingenuity. But of course the father had to go on and add that, although he was sure the doctors had *some* merit for the final outcome, *really* this was a clear example of a miracle, a direct intervention of God to save his child. There are so many things that are simply wrong with all of this that it is, again, hard to imagine how perfectly normal, functional, people can sincerely embrace this sort of “reasoning.” To begin with, why does God get the credit for solving the problem, but not for creating it in the first place? Second, isn’t such an unwarranted shift of credit insulting for the doctors who did the actual hard work and took on a huge responsibility in case of failure? More generally, if we all (including doctors) adopted such attitude, wouldn’t that spell the end of any attempt to better humanity’s condition? If it’s all in God’s hands (why does He need hands, anyway?), then why bother? Which is, of course, exactly the attitude of so-called Christian scientists (an oxymoron of grotesque proportions), who leave their children to die because they think that all disease is the result of poor faith and can be cured only by restoring the latter.

I am no Voltaire, and this essay is no *Candide*. Therefore, I will leave it to the great French Enlightenment writer to make a final comment: “Doubt is not a pleasant condition, but certainty is absurd.” We would find ourselves in a much better world if more of us lived by such words.

N. 59, March 2005
And they say liberals are whiny!

It is rather amusing (when I'm in a good mood) to hear conservatives (especially religious ones) complain that they are "persecuted" in American society, that they don't get a saying, that they have constantly to battle against the liberal media bias. What persecution? What liberal media? Don't get a saying? What are these people talking about?

In the United States, conservatives now control the Presidency, the House of Representatives, the Senate, and a large number of State Governorships. If we add to the list that the Supreme Court is increasingly conservative, and may soon become extremely so, in essence these people control the country -- and set the agenda for the rest of the world. What, then, is there to complain? Why is this not enough?

Well, one thing to understand about ideological zealots (again, both of the religious and non-religious variety, though the former are by far more common) is that they absolutely *know* they are right, so there really is no point in considering alternative opinions, is there? Moreover, since they tend to see things in apocalyptic terms, always painted in stark black and white, then anything less than 100% victory can be construed as a failure of cosmic proportions.

There is, of course, one little area of American life where conservatives are still by far in the minority: academia. By the latest estimates, about 70% of faculty at US universities consider themselves "on the left" within the current political spectrum. Of course, this has immediately raised the ires of conservatives, who have recently had the audacity to claim that there is a nationwide conspiracy to keep right-leaning faculty out of our campuses. It isn't clear whether the charge applies only to state universities or includes the private ones (in the latter case, one wonders how many liberal-leaning faculty are on the payroll, say, at Bob Jones "University"). But the fact remains indisputable: academia is still a bastion of liberalism, and that ain't gonna change overnight, no matter how widespread the "outrage."

Outside of silly conspiracy theories, why exactly is it that academia is full of liberals, and why is it that the majority of the media *used* to be equally favorable to moderately progressive positions (at the moment, only *The Onion* and *The Daily Show* are firmly into this category)? As in the case of any search for causal explanations, we must start with observations aimed at identifying the characteristics that separate the two groups in question (academia and "the real world"), to see if such differences may be conducive to the formulation of sensible hypotheses about the underlying causal links.

There are three things, roughly speaking, that come to mind: the high diversity (ethnic, and of opinions) on college campuses; the financial independence of faculty (after tenure); and, oh yeah, the fact that *the very idea* of a "liberal arts" education is to foster critical thinking, dialogue, and the endorsement of positions based on thoughtful consideration of facts and values. Hmm, could it be that this triplet makes for an environment in which ultraconservative ideas just don't flourish? Could it be that

religious bigotry simply can't take the challenge of an ongoing open discussion, where there are no sacred cows and everything is fair game for public criticism? Could this be why academic freedom tends to be extremely limited in ultraconservative, ultra-religious campuses?

But, wait! Aren't those very characteristics of dialogue and critical thinking precisely the ones everybody agrees should be encouraged among the general public, since only they can -- in the long run -- maintain a healthy democracy? Ah, but there is the rub: the religious and ultraconservative right does not really want democracy, certainly not in the sense of a citizenry that is intelligent, well-informed, and capable of making decisions based on more than a knee-jerk reaction to MTV-style simplistic slogans. That must be why the Republican party, especially under Bush, is so clearly against fostering education (despite the risible "no child left behind" program) and systematically attempts to discourage voting among the American public.

The real question, unfortunately, is whether there is anything that even remotely looks like a "liberal" wing of the Democratic party, or more broadly a "left" in the American political spectrum. Frankly, Bill Clinton has always looked to me like a moderate Republican, and it is hard to believe that Howard Dean is considered a "radical" within Democrats. Have these people ever seen a radical in their lives? Thanks to the right-wing propaganda (and direct or indirect conservative control of most of the media), the American public has come to believe that the words "liberal" and "progressive" are akin to, God forbid, socialist or communist! There essentially is *no* left in this country, just a moderate center, followed by a right, an ultra-right, and a super-duper-ultra-right. Pretty sad, but one has to admit that the extensive, grass-root program of social reengineering began by the Christian Coalition and similar groups in the mid-70s has finally succeeded and, save for the unlike possibility of miracles, the political realignment is here to stay.

What, then, are we to do about it? We need to learn from the competition, and turn their own successful tactics against them. I am not talking about attempting to rig the vote during presidential elections, I am referring to -- quite simply -- going back to the basics and pick young, energetic people to run for office. And do equip them with simple, bite-size, messages. At the moment, that's all that a large chunk of the American public seems to be able to deal with. The time for more sophisticated, dare I say European style? (see France, England, and Germany, for example), political discourse may come again, in a few decades. But we can't keep seeking the high moral and political road, while the other side is ruining not just this country, but the rest of the world as well. Wake up, smell the roses, and look for the next Bill Clinton (as ultra-moderate as he was): a good southern boy, politically centrist, with a charming smile and a simple message. It still beats the hell out of what we've got now.

N. 60, April 2005
Useless feats

I may be going out on a limb here, but I just don't get it. I have just watched the *ABC News* coverage of millionaire Steve Fosset's solo flight around the world without

refueling a plane. To put it bluntly: who cares? In the past few years we have seen people getting to the North Pole, around the world, on top of Mount Everest (all for the n^{th} time), while abiding to a variety of artificial restrictions, just to make it a little bit interesting.

While these actions are billed by the media as stunts of human ingenuity, endurance, and courage, they are largely entertainment. Dangerous entertainment, but entertainment nonetheless. What really made history and made us feel part of a species that could achieve incredible feats was the first time that somebody – against all odds – reached the peak of the Himalaya, the Moon, and what not. But doing it again equipped with sophisticated electronic gadgets, under continuous satellite surveillance, with a bunch of sponsor's logos while hopping on a single foot? That's entertainment.

Not that there is anything wrong with entertainment, of course. Leisure is a fundamental element of what makes our lives interesting and lively – if we live in a part of the world where we can afford to maintain a class of professional entertainers (or academics such as myself, for that matter!). But as conservative social commentator Neil Postman aptly put it in the title of one of his books, we are turning into a society that is entertaining itself to death. Moreover, such entertainment is more and more based on blurring the distinction between reality and fiction, witness for example the infamous “reality shows” that keep afflicting our airwaves.

Take the Marta Stewart case. The Queen of Proper Manners who was convicted of lying to federal prosecutors about a stock sale is about to leave prison at the time of this writing. Now *ABC*'s *Good Morning America* promises “to be there” for us, to cover every minute of the “event” and give us a glimpse of how Martha survived a few months of relatively cozy confinement, and of course to get the exclusive on her plans for prime time TV and the taking back of her financial empire. Moreover, a few days ago *Newsweek* run a cover story on Martha entitled “Martha's Last Laugh,” in which they were suggesting that the time spent in prison may actually end up having a positive effect on the celebrity's career outlook. That may be true, but what wasn't quite true was the photo of Martha featured on *Newsweek*'s cover. You see, it wasn't really Martha, not entirely. The face was hers, but the body was somebody else's, an anonymous woman whose body was presumably chosen to highlight the subtitle of the story: “After prison she's thinner, wealthier and ready for prime time.” When asked about what should have been a big embarrassment for her weekly (which, after all, ain't no *National Enquirer*), assistant managing editor Lynn Stanley shamelessly pointed out that *Newsweek* clearly stated in the credits (in tiny font) that the cover “photo” was actually a “photo illustration.” Whatever.

The point is that we keep spending more and more time in a fantasy world constructed by the mass entertainment media for the sole purpose of selling us merchandise and make money in countless other ways. We actually think that Michael Jackson's trial is worthy of daily attention, to the point that the *E!* Channel is going so far as broadcasting a daily *reenactment* of the court proceedings, featuring a Jackson impersonator. Our dream vacations are to be spent at Disney World or Las Vegas, the quintessential

realms of tackiness and fake. A frequent commercial for a well known hotel chain keeps telling us “I've been everywhere,” while showing us shots of a couple visiting *replicas* of famous places or monuments, from Paris, Texas to the Parthenon in Nashville, Tennessee. And so it endlessly goes.

This, unfortunately, isn't just happening in the United States of America. Thanks to the US's aggressive export of its own cultural icons, Disney World can be found outside of Paris (France), of all places. Japanese consumers (have you noticed how rarely we use the word “citizen” anymore?) are legendary for soaking up everything American, and now even Egypt, with its culturally and religiously conservative community, has seen the appearance of Western-style comic books and super-heroes (though apparently the Middle Eastern variety fights Zionists, rather than communists or terrorists).

Back to the US: have you had the stomach lately of watching one of the major morning “news” shows that pride themselves in bringing you what you really ought to know about the world? No matter whether your favorite hosts work for *ABC*, *CBS*, *NBC* or even *CNN* (I will not consider *Fox News*, which is quite simply an insult to human reason), you will find only shallow entertainment dressed up as news. Ironically, in fact, a recent survey found that viewers of *Comedy Central*'s *The Daily Show with John Stewart* are more informed about events and national news than people who watch the “serious” news outlets. Ouch!

In *The Divine Comedy*, Dante Alighieri has Odysseus defend his choice of life by saying “Fatti non foste per viver come bruti, ma per seguir virtute e canoscenza” (You were not made to live like brutes, but to pursue virtue and knowledge), a calling for which the mythical Greek hero paid the high price of wandering for ten years away from home, hopping from one dangerous adventure to another. The thing is, Odysseus didn't have *CNN* to follow his escape from the Cyclops, nor was his ship emblazoned with the *Coca-Cola* logo while perilously avoiding the two monsters Scylla and Charybdis. Of course, Odysseus himself was the child of Homer's (not Simpson) imagination, and hence a form of entertainment. But do you really think that Michael Jackson's exploits will be remembered for thousands of years to come? Let's hope not.

N. 61, May 2005
Habemus Papam!

Or, rather, *they* (the roughly one billion Catholics of this planet) now have a new Pope, former German cardinal Joseph Ratzinger, now known as Benedict XVI. As a former Catholic (sort of) and an Italian who grew up not far from the Vatican, I followed the American media frenzy over the death of John Paul II with much interest, although the whole coverage by CNN and company struck me as rather odd. It is true that Catholics still make up a large fraction of Americans (and they vote based on some – but apparently not others – of their beliefs, as John Kerry discovered when it turned out that abortion is a moral issue, but war somehow isn't). Still, only 20% of American Catholics actually claim to closely follow the dictates of any Pope, and the US media usually pays little or no attention to what the self-described infallible sage from Rome says or does. No, the media frenzy was really just another example of celebrity worship, no different from the coverage of Michael Jackson's trial or the ever-fascinating saga of who Brad Pitt *really* goes to bed with.

That said, what ought we to think about the just departed Pope, Carol Wojtyla? As a scientist, I can't really complain that much about him. He managed to officially pardon Galileo (almost four centuries later, but hey!), though he refused to apologize for burning Giordano Bruno at the stakes. John Paul II also wrote a letter to the Pontificial Academy of Sciences in 1997 advising Vatican scientists (and Catholics at large) that the Church doesn't have a problem with the scientific theory of evolution (that didn't help me much when I was living in Tennessee, since most of the local creationists would simply retort that the Pope was wrong and sure to go to Hell, which I'm confident would have come as shocking news to the man from Poland!).

On the other hand, Wojtyla was certainly a very conservative Pope, even by the standards of the Catholic Church as they had evolved since the Second Vatican Council. John Paul II refused to consider a larger role of women in the Church, actively campaigned against the use of contraceptives worldwide (Church officials on the ground in Africa have been accused of lying about the effectiveness of condoms to prevent AIDS, just to promote their senseless "abstinence only" policy), not to mention of course his opposition to gay rights and abortion. While one can surely expect the 2000-year old institution based in Rome to fighting a rear-guard war against human progress, it seems to me that a man indirectly responsible for the death and suffering of millions around the globe should hardly be considered for a fast-track to sainthood! Indeed, there have been many dissenting Catholic voices, even within the Roman Curia, against the strictness of Wojtyla's views.

Which brings us to Benedict XVI. Although Ratzinger chose his name with the intent of being conciliatory (Benedict the XV inherited a highly divided Church at the beginning of the 20th century, with progressives once again pitted against conservatives, and did his best to bring about a reconciliation), he isn't exactly known as a moderate within the Vatican. On the contrary, Ratzinger served under John Paul II as head of the "Congregation for the Doctrine of the Faith," a position that allowed him to punish a score of "liberals" within the Church. According to the New York Times, one of

Ratzinger's comments on his role as defender of Catholic orthodoxy was that “The Pope told me that it is my biggest religious obligation not to have my opinions.” How sad. And yet, how remarkably apt to capture not just Ratzinger's position, but the whole idea of the Catholic Church: not only there is one invariable truth, but nobody else can access it other than the highest ranks of the Church itself. It is precisely this sort of attitude, of course, that started the Protestant Reform and brought about a major schism among Christians, a schism that Benedict XVI is highly unlikely to help heal.

There are good reasons to think that Ratzinger has been chosen to succeed John Paul II because the august cardinals debating inside the Sistine Chapel had no idea of where the Church should go, and just wanted to buy some time (they are supposed to be inspired directly by God, but it seems that even the Almighty needed five rounds of voting to make up His mind). On the one hand, North Americans, and especially Europeans, have been abandoning the Church precisely on the ground of the kind of strict orthodoxy enforced by John Paul II and, likely, by Benedict XVI. Most Catholics in Western countries seem to feel an increasing cognitive dissonance between the realities of a complex multi-cultural society and a set of teachings that has hardened over two millennia. Then again, the Church has been growing especially in South America and Africa, where evangelical Christians and ultra-orthodox Catholics have been making the fastest gains in terms of converts. Thorned between choosing a liberal Pope to recoup some of the losses in Europe and the US, and an even more conservative one to help the expansion in the new territories, the college of cardinals went for the safest choice: an old Pope (Ratzinger is 78), who will maintain the same course established by John Paul II for a few more years. After that, God will provide. Or will She?

N. 62, June 2005
On Holy books

OK, so *Newsweek* made (probably) a mistake in reporting, based on an anonymous source, that US interrogators at the infamous base in Guantanamo Bay have desecrated the Koran, allegedly by flashing it down the toilet. Bad journalism, though no worse than what the American media have accustomed us to for the past several years. Even the use of anonymous sources is neither unusual nor necessarily a bad idea (Watergate might not have happened without the anonymous source famously referred to as "deep throat").

What is most interesting about the *Newsweek* debacle is the reaction of the US government, and perhaps even more so the underpinning of the widespread outrage at what the American weekly has allegedly caused as a result of its mistake.

Take the reaction by US government officials. The attack on *Newsweek* was all-out, with allegations of damaging American reputation with Muslims across the world. As if that needed any help since the Bush administration has gone to war on the basis of what turned out to be *false* information about alleged weapons of mass destruction; information, of course, provided by an anonymous source ("curveball"), and that former Secretary of State Colin Powell shamelessly paraded as "fact" in front of the United Nations.

It is in fact astounding, and more than a little worrisome, that the Bush administration is so eager to attack the press and use it as a scapegoat for its own foolish foreign policies. It is downright scary when so many right-wing media pundits are ready to jump on *Newsweek* for being "unpatriotic" (code word for doing or saying anything they don't like). It is funny (in a dark humor sense) when the magazine is labeled as part of the "liberal media conspiracy" (a convenient rhetorical fiction invented by the extreme right), even though *Newsweek* has ran plenty of stories that favorably covered the war on Iraq and the actions of the US military. It is dangerous when almost everybody (except an op-ed piece in the *New York Times*) ignored the statements of an American general (a member of the same military that *Newsweek* has allegedly purposely bashed and engendered) to the effect that the riots that killed several people in Pakistan had nothing to do with the publication of the incriminated article.

But let us consider the broader picture for a moment. Suppose for the sake of argument that the short, inaccurate, article in *Newsweek* really was the spark that led to murderous riots half a world away. In what reasonable sense are the author of the piece and editor of the magazine *responsible* for such a sad outcome? The reasoning behind the accusations raised against *Newsweek* is that we actually *expect* people to become violent because a book they care for has been flushed down the toilet. We may not (at least officially) condone such reaction, but we put the responsibility square on the shoulders of the journalists, rather than on the people who so easily resort to violence. You see, if not OK, it is at least *understandable* when religious zealots riot or kill to defend their twisted understanding of their faith. It must have been a similar feeling that prompted the former Pope, John Paul II (the one now being considered for fast-track to

sainthood) to refuse to apologize for the Catholic Church's killing of Giordano Bruno in 1600. You know, Bruno may have been right about the fact that the earth is not the center of the universe, but after all, he was a heathen...

But wait! Isn't precisely this sort of religious intolerance that brought about the attacks on the US on 9/11 2001? There may have been *reasons* why the terrorists did it, and these reasons surely had something to do with American foreign policy in the Middle East during the past several decades. But reasons are not the same as justifications. The terrorists who attacked the twin towers in New York and the Pentagon were fully to blame for having decided that the way to resolve cultural and political conflicts is to kill innocent people. Similarly, the only culprits in the Pakistani riots are those religious bigots and overzealous security forces who went ahead and did the rioting and killing, regardless of what real or imaginary "offense" to their religion they may have used as an excuse for their senseless actions.

Here is another way to put the point. Imagine the headlines: "Creationists flush a copy of Darwin's *Origin of Species* down the toilet. Dozens killed in the resulting riots on university campuses." Of course, you will never see such a headline, except perhaps in *The Onion*. The reason is not just that not even the most ardent secular humanist actually regards Darwin's writings as sacred, but that the whole ethics of science and humanism is about tolerance for other people's views. To paraphrase Mel Brooks, a sense of humor is the humanist's best defense against the universe. Unfortunately, the one thing religious zealots seem to sorely lack is precisely a sense of humor. Yet surely God, the most perfect of all beings, appreciates a laugh here and there, even at Her own expense. After all, didn't she create the Platypus?

N. 63, July 2005
OK, I changed my mind (three times!)

As regular readers of this column know, I occasionally try to debunk the myth that skeptics are just a bunch of curmudgeons and naysayers, people who have a strong psychological need to feel superior and always right. As a small contribution to this demystification, let me tell you about not one, not two, but three (!!) instances in which I changed my mind about issues of concern to freethinkers and skeptics, and in the process try to learn when it is in fact reasonable to change opinion.

The first example is the most important from the point of view of my personal philosophy, and in fact it does concern an apparently subtle -- yet crucial -- philosophical point. A few years ago, the National Association of Biology Teachers changed their definition of "evolution" in a way that avoided any reference to the absence of undirected causes guiding natural selection. The change was prompted by complaints by prominent theologians, such as Alvin Plantinga, but was also endorsed by secular scientists such as National Center for Science Education's Eugenie Scott. I was outraged, and wrote a scathing letter to the NABT (and to Scott, I didn't bother writing to Plantinga), to the effect that this was setting a worrisome precedent of an educational organization caving in to religious pressure. My friend Genie Scott tried to explain to me that the change in wording was based on the distinction between philosophical and methodological naturalism.

Naturalism is the position that the world can be understood in natural (as opposed to supernatural) terms, and has become a focus for the wrath of creationists, which accuse scientists of attempting to sneak atheism into public education. But this accusation confuses the two forms of naturalism: a philosophical naturalist is, indeed, an atheist (or other non-religious individual), because that person has concluded (often based on reasoning *informed* by science) that there is, in fact, no such thing as the supernatural. Science does not need to make that bold philosophical claim, because it has the option of adopting methodological naturalism, i.e. a *provisional* and pragmatic position that all we *need* in order to understand reality is natural laws and phenomena. The supernatural may exist, but it is not necessary for explanatory purposes. The beauty of this distinction is that it shields science from the creationist accusation of being just another religion. Ironically, one can easily show that most human beings, most of the times, behave as methodological naturalists, including creationists! Say, for example, that your car doesn't want to start this morning. What do you do? You will likely not pray or ask your preacher, you will go to a mechanic. That is, you are *assuming* that there must be a natural explanation for the break down. Moreover, even if the mechanic will not be able to identify the problem and solve it, you will go and buy a new car with the conviction that there *must* have been a logical explanation for the break down, but that insufficient data were available to both you and your mechanic to pinpoint the problem. That is exactly the way science works, and it's a beauty.

At the time of the NABT controversy I thought that invoking the distinction between philosophical and methodological naturalism was a cop out, and I rebelled against it. Some of my colleagues, most notably Richard Dawkins, still think that way (he often

refers to situations like these as instances of "intellectual bankruptcy"), but I have changed my mind. While I still think the NABT should have considered the matter independently of the interference of theologians (at least part of the motivation for the change was pragmatic, not philosophical), I owe an apology to my friend Genie: she was right, I was wrong. Of course, I am *both* a methodological and a philosophical naturalist, and I do see a *logical* connection between the two. But such connection is neither necessary nor a result of scientific evidence (pace Dawkins).

The second instance I wish to discuss also relates to the never-ending battle against creationism. When I first got involved in it, soon after having moved to the University of Tennessee (near the site of the infamous Scopes trial) in 1996, I began debating creationists in public. I have since done several debates against most of the major figures of that bizarre cultural movement (including Duane Gish, Ken Hovind, Jonathan Wells, and William Dembski, to name a few). But the number of debates I have engaged in has diminished to a trickle over the years, reflecting a change of heart I have had about the whole approach. Once again, Genie Scott was right (and, this time, on the same side of Dawkins!): debating head-to-head against creationists is a bad idea because most debate formats favor sound bites, and sound bites are easier and more effective for people who wish to attack science than for those who want to defend it. It is relatively easy to throw hundreds of apparently damning questions to a scientist in the span of a few minutes; it is very difficult for a scientist to seriously address even a few of those or, more importantly, to explain to the public how science really works (as opposed to the caricature presented by creationists). This is not to say that scientists shouldn't be engaged in the public arena to counter creationist claims; indeed, even Scott agrees that *some* public forums are acceptable for two-way encounters (usually media appearances with a truly neutral host and a conversational, rather than confrontational style). But the best strategy we have is to talk to the public directly, on our terms, and using the arsenal of tools available to science educators. So, please, don't call me again for future debates, OK?

Lastly, let's talk about this "Brights" thing. As some readers may know, the Brights are a recently emerged movement within the general area of freethought. Brights decided to call themselves that way because they (rightly) realized that most other terms (e.g., atheist, skeptic, etc.) tend to carry negative connotations that contribute to stigmatize non religious people and justify discrimination against them. So, the proponents of the Brights movement said, why not emulate the success of the Gay community and use a positive word to describe who we are? The initial response from many authors (including myself, in an earlier *Rationally Speaking* column) was very positive, even enthusiastic in the case of Dan Dennett and Richard Dawkins. The problem, of course, was pointed out immediately, and even the brave proponents of the Brights movement themselves acknowledged it and wrestled with it: going around affirming one's "Brightness" (even capitalized, as a noun, rather than in small letters, as an adjective) isn't exactly the best way to diffuse the image of intellectual snobbery that afflicts skeptics and freethinkers (the latter being another word of questionable usefulness in this context). Indeed, I have never actually introduced myself as a Bright to anybody. Therefore, while I wish the Brights the best future I can imagine, I'm no longer sure it was such a bright idea.

These three instances show not just that skeptics *can* and in fact do change their mind about issues. More importantly, it shows that such changes occur after careful consideration of arguments (and, where appropriate, empirical evidence). Changing one's mind is not a virtue in and of itself, because it can happen for very bad, or at least superficial, reasons. As Carl Sagan once put it, be careful not to be so open minded that your brain falls off! On the other hand, maintaining a position for the sake of consistency, or out of sheer stubbornness, negates the very essence of what David Hume called "positive skepticism." One last warning: I am open to change my mind again on any of the three issues discussed above, should new good arguments or evidence come my way...