

# **Beyond Belief: Science, Religion, Reason and Survival**

## **The Conversation Continues**

### **Criticism of Beyond Belief by RP Bird**

It deeply annoys me when the Big Guns of science spout off about protecting science. Like the rest of us have our thumbs up our asses? I'm one of the thousands of Kansans who wrote to the state board of education complaining about the pseudo-science of Intelligent Design. I'm always short of money, but I gave a little to SEA when they started up operations. I've written letters to my state representatives and my congressmen on the subject of science and keeping religious ideas out of science education.

So imagine my dismay when I read the NY Times account of the La Jolla meeting. Remember just before the Iraq war, when Middle Eastern experts warned Bush and the rest of us that invading Iraq would be confirmation of the worst fantasies of the jihadist movement? Congratulations, you've just done for science what Bush did for the USA in the Middle East. I can already hear the Christian Right: "We told you, they're out to get us!"

Not only that, but you and others want to hurt the cause of science by adopting the methods of the Right? Are you nuts? If you adopt the methods of a religion, you make science into a religion.

Also, what's with this "loyalty oath" everyone at the conference had to spout before being heard? No one will listen to them unless they declare the aren't religious? Isn't that what the Christian Right does?

You of all people should know that the best defense of science is to do science and teach what you have learned. The crap at La Jolla only alienates your allies and gives aid to your enemies.

Lastly, please inform Steven Weinberg that he should read a history book. Religion has been the source of great suffering in world history, but the three greatest killers of all time were atheists. Please recall that Mao was never a Catholic, Stalin rejected the priesthood, and Hitler had not one religious bone in his body. Their combined body count is toward the top, around 40 to 70 million people. That beats the Inquisition by a mile.

You can look up my essay on this subject under rpbird on dailyKos.com. A copy is appended to the end of this email. Congratulations, you are now a member of an organization I just invented, called The Grand Idiots of Science.

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### **DailyKos Essay: Weinberg, Dawkins, Tyson, Porco, Sloan, and Harris – Idiots of Science on Parade**

This is about the idiocy and the idiots at the La Jolla meeting, "Beyond Belief: Science, Religion, Reason and Survival." The idiots of science were in attendance: Steven Weinberg, Richard Dawkins, Neil deGrasse Tyson, Carolyn Porco, Richard P. Sloan, and Sam Harris. I thought some of them were intelligent, until now.

Science is the best hammer in humanity's toolkit. It is the most useful tool we have. Because a few religious extremists have irritated the grand idiots of science, they propose

to set up science as a religion. This is the dumbest idea I've ever heard. It's like a guy who has mice in his house. Instead of setting a few traps for them, he blows up the house. We're going to ruin the best tool humanity has because a few religious fundamentalists got up our noses? Even I can see that there are thousands of religions and only one science. You screw up science, you screw it up for good. Leave science alone. Science sees the universe as it really is. That's important.

We may be too late to save it. The idiots of science have already established a loyalty oath. It was working at the conference. For anyone to be heard, they had to preface every remark with "I don't have a flicker of religious faith," or "I'm not a religious person." This is the flip side to the religious right, not rationality.

I am a progressive. Progressivism is the union of rationality and morality, applied to politics. My progressive nature is repelled by the likes of Dawkins, Weinberg, Porco, Sloan, and Harris - just as I am repelled by Pat Robertson. There is the assumption in the comments by Dawkins and his buddies that they are morally better than the religious right because they are scientists. Oh, really? Many of the Nazi scientists working in the death camps thought the same. Some of them did real science, with demonstrable results. They had to drown and freeze to death hundreds of men to get their results. Science is a tool. A hammer can build a house for poor people to live in, or it can be used to club them to death. There is no morality in the universe. Does the giant black hole at the heart of our galaxy hesitate before eating a planet full of life? There is no morality in nature. Does the owl justify the death of a mouse? Evolution is not powered by right and wrong. The only place you'll find morality is in the human brain. I believe in hell, but hell is only for us. There are many popes and ministers and religious people in hell right now. We are warned that many who think they will go to heaven will burn, and many who are judged by others to be bound for hell will enter heaven. There are atheists in heaven. It must drive them nuts as they sit on the right hand of the Father. To quote from a recent movie: "Your actions echo in eternity." Actions speak louder than words. Actions speak louder than faith. Religious faith does not protect against error. Belief in science does not protect against error. I believe there are many scientists who are in heaven, and a few cooking in hell.

To adopt the tools of religion is to become a religion. By the way, hasn't this already been tried? Didn't it lead to the monstrous error of "the Great Chain of Being"? Didn't it lead to the oppression of black people and others because it was "demonstrably true" that white people were superior? Before every truth we have from science, there was a mistake that had to be proven wrong. Science can correct itself because it isn't a religion. The DNA of black people and white people is almost identical. There is no genetic predisposition of one race above another. If inner city kids could get out of poverty by studying math, we'd be asking ourselves why black people have a predisposition for excellence in mathematics.

For most of us trapped in the human condition, in a world and a universe at most indifferent to our existence, we crave a connection to something larger than ourselves. Science as it exists now is a tool. It cannot give us that connection. For that we seek out religion. There is a choice for everyone. Can I be a Taoist? Can I be a Christian? Can I be a Dervish? Can I be a Buddhist? Religion is not a tool, it is not a way to know the universe. It is a way to know ourselves, to order our lives with morality and faith. The religious right is in error if they think their beliefs inform them about the physical universe. The grand idiots of science are in error if they think they can turn a beautiful tool for viewing the universe

into a way into the human soul. Both corrupt what they love by trying to turn it into something it cannot be.

Please note the names of the idiots of science. If you run into them on the street, be sure to explain how their attempt to "save" science could destroy science.

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## **A Response by Carolyn Porco**

Mr. Bird,

You CLEARLY have misunderstood what I was saying, and perhaps misunderstood what many others had to say also. This may be due to the journalistic angle presented in the stories you read. Such stories often want to portray a debate as black and white, leaving out all the `gray' in between.

You should hear our presentations as we presented them. (Go the Science Network website and you will find them there). Then you will see and hear better what we all were trying to say, and that in fact there was a variety of views presented at the conference.

And, no, there was no `loyalty oath'. And nobody thinks that scientists are morally superior to anyone else. I certainly don't.

And yes, science, or more specifically, what science has to show us, provides the grist for a spiritual connection. This is what I believe. Certainly, for me, being a scientist allows me a very spiritual connection. Others, I am offering, might find a similar connection.

And no I'm not saying science should become a religion. My idea was only that we underlie scientific teachings with a humanistic foundation, and aim to provide people with the same social embrace that religions do. Is that so bad a suggestion? I would love -- and I bet you would too -- nothing better than to have people understand the good and the glorious that scientific discovery has put at our disposal. (And yes, it can be used for evil also, which makes it even MORE imperative that we get the word out that it can be an agent of tremendous good.) Apparently there are already organizations formed on this premise, and I'm going to forward you two emails I received almost immediately after yours to give you a clearer idea of what I meant.

It's a shame you came to the conclusion you came to, and that you have adopted such a (publicly) antagonistic view, even resorting to name-calling. I'm sure you have your reasons -- you obviously feel passionately about the subject, which is a very good thing -- but you might want to look into the whole matter further and see if you still feel that way after you've spent some time examining what was really said.

Thanks for your time,  
Carolyn Porco

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## **Extreme Behavior by RP Bird**

Dear Scott Atran,

I deeply appreciate your comments about the extreme behavior of many at the science and religion conference at La Jolla. I feel betrayed by Dawkins and Tyson. I expended a lot of effort opposing the ID crowd here in Kansas, and the subjugation of science to politics (I even gave a little money to the SEA). Science in our culture has great power because of its apparent neutrality. It is not a religion, it's not out to recruit anyone, it has no political agenda. I say this as a religious person: there are a thousand religions and only one science. If science is made into a religion, it becomes one of many, it loses its power. I also found it highly troubling that science, under Mr. Tyson, now has a loyalty oath. Gotta be an atheist or else. Did they actually listen to themselves? So all my work is for nothing, all the letters written, the money donated (a tiny amount, but still...). Every time I've defended the idea of global warming, or evolutionary theory, it's all for nothing. Science under Mr. Dawkins and Mr. Tyson has become just another player, just another self-interested element in our culture. They plan its total destruction by turning it into just another religion. The Jehovah's Witnesses and the Mormons come to my door all the time. Should I expect the Church of Science next? This storm will pass, I know. The idea of the cultural neutrality of science will return, even stronger than it is now. This is probably all about pumping up the sales of Dawkins' latest book. Something I love is being smashed up. Though I'm a history instructor, I subscribe to four science magazines and half the books in my library are on science. I've made various topics in geology, evolutionary biology, and technology part of my lectures in Geography and Western Civilization. I was so upset I wrote inflammatory essays at dailyKos calling Dawkins and others The Grand Idiots of Science. You said it made you embarrassed to be an atheist. Now you know how I feel when I see Pat Robertson going off his nut, or some fundamentalist tell a bunch of little kids that they're all going to hell. Is this what we have to look forward to, more extremism and less common sense?

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## **A Response by Scott Atran**

Dear R.P. Bird,

I would like to modify and elaborate a bit my reply to your note to me.

I am always very, very leery when scientists use science to justify political or moral missions. Not that science cannot sometimes deeply inform politics or ethics; however, I do not think that science can justify either. On the afternoon of the second day of the Beyond Belief conference, at which few reporters were present (the New Scientist reporter in the article to allude to had interviewed me separate from the meeting), I shared the podium with Richard Dawkins and then Sam Harris whose positions on the issues you raise are similar. The gist of my remarks on the podium, along with a few other interventions, was as follows:

(1) A WORSE THAN WORTHLESS ENDEAVOR FOR A WORTHY PROGRAM. The task of

containing and trying to roll back political fundamentalist movements in the United States and across the world is important and praiseworthy. Fundamentalist-inspired attempts to dictate what science must or must not consider, such as the criminalization of evolutionary teaching in certain Muslim countries or force feeding the inanities of Intelligent Design in American high schools, are damaging to science and society. However, efforts to fight religious belief itself - to "de-program" the religious - make about as much sense as attempts to banish the irrationalities of romantic love, vengeance, or any sentiment of hope beyond reason. The main underlying current of thought at the Salk Institute's recent conference on "Beyond Belief" was that until now science and reason have too passively surrendered or compromised to religion and unreason, which are wily and ruthless street-fighters. Think of Tomás de Torquemada, the Holy Inquisitor who burned books, imperfect Christians, Muslims and Jews; or Abu Musab Zarqawi, chief of Al Qaeda in Iraq, who blew up and beheaded imperfect Muslims, Christians and Jews; or Ann Coulter, the raucous media idol of a virulent brand of American Christian conservatism, who would bury Darwin and every godless liberal in history's garbage heap, right in there with Hitler and Stalin. Then think of Socrates meekly swallowing his poison for telling the truth, Galileo abjectly renouncing his own seminal discoveries, or Pakistan's greatest scientist, physics Nobel laureate Abdus Salam, compelled to profess over and over again his undying love for the Holy Qur'an to a government that condemned him as a heretic, and which today even more than before treats Darwin's teachings as criminal.

Now, according to Salam's colleague and co-Nobel Prize winner Steven Weinberg, scientists must rise up to the challenge of liberating humanity from "the long nightmare of religion" Biologist Richard Dawkins tells us that we need to "come out of the closet" and form a political lobby of committed atheists and scientists to do public battle with religion and other forms of "intellectual rubbish" that tyrannize the mind. For neuropsychologist Sam Harris, technological advances in the ability to terrorize and wage war require an uncompromising and unrelenting struggle to destroy religion - especially, but not exclusively, Islam - and banish unreason beyond the pale of civilization.

But how naïve are such calls to arms! I find it fascinating that brilliant scientists and philosophers have no clue how to deal with the basic irrationality of human life and society other than to insist against all reason and evidence that things ought to be rational and evidence based. It makes me embarrassed to be a scientist and atheist. There is no historical evidence whatsoever that scientists have a keener or deeper appreciation than religious people of how to deal with personal or moral problems. Some scientists have some good and helpful insights into human beings' existential problems some of the time, but some good scientists have done more to harm others than most people are remotely capable of.

(2) **IGNORING THE DATA.** The belief that science can or should replace religion as a major factor in motivating and shaping - rather than just informing - politics or ethics, and by so doing steadily improve the human condition, is itself a delusion. The speculations I heard in the conference, about what religion can or cannot do and what the motives or consequences of religious belief are, have been almost entirely supported by the smallest of data sets, usually a N of 1 - the speculator himself or herself - and only on the basis of that person's selectively uninformed opinion. Imagine if you tried to do science this way, you'd be laughed off the stage or at least met with embarrassment and bewilderment, not lauded or applauded.

Of course, if it can be proven that religious beliefs are particularly dangerous to life and limb - at least any more dangerous than a belief in the cleansing power of "democracy" - attempts at (say) de-Islamicization might be as important as de-Nazification. Yet there is no such proof, and in the absence of any proof, or even compelling data of any sort, too much of the meeting resembled the rantings of religious bigots. In fact, those of us doing actual empirical research in this area have uncovered evidence to the contrary of what was claimed. Jeremy Ginges, a psychologist at the New School for Social Research, finds that belief in God does not promote violence, combative martyrdom or almost anything else the "God delusion" was blamed for at the conference. University of British Columbia psychologists Ara Norenzayan and Ian Hansen have recently shown, for some 10,000 subjects surveyed in several countries and continents, that although believing my "God is the only God" increases the odds of scapegoating by 32%, simply believing "there is a God" decreases the tendency to blame others for one's troubles by 45%. These researchers also show that atheists with exclusivist beliefs are just as likely to scapegoat others as Christians, Jews or Muslims.

It is true that Elizabeth Loftus and Mahzarin Banaji presented compelling data on the formation of false beliefs and implicit biases. But the relevance of this research to the formation or suppression of religious beliefs is distant and doubtful. For one thing, religious beliefs are not false in the usual sense of failing to meet certain truth conditions, like "the earth is flat" or "natural grass is orange." Rather, core religious beliefs, like poetic metaphors, are literally senseless in that they altogether lack truth conditions; that is, there are no logical or empirical criteria for judging whether such utterances are true or not. As Aristotle and Kant noted, there is no more literal sense - no right or wrong to the matter - to deciding if "God is omniscient" than to deciding if "an idea has wings." As Hobbes surmised, such notions are truly incomprehensible. They are used primarily to evoke other ideas in an open-textured manner, depending on the context at hand and on people's interests at a given time. That is why religious ideas can be "adapted" to so many different situations, and in contrary ways. Literal dogmatists who try to pin down the meaning of core religious beliefs are quite the exception, not the rule.

(3) MORAL MYOPIA. In science there is cumulative progress. This is a fact and the progress real, despite postmodernism's doubts. Most of the speakers we heard from believe, as professor Dawkins clearly does, that there is also cumulative moral progress. I am much less sure of this. Hitler and Stalin were no mere aberrations of history and the Cold War could easily have led to the annihilation of civilization as we know it. "Civilization is intermittent," Menahim Begin ruefully observed. History, I believe, is contingent for its development on unforeseen and improbable events, and cascades forward in spurts and spirals. (Indeed, it was only the unsung heroism of Vassily Arkhipov, one of three officers on a Soviet submarine who refused to go along with the other two in giving the order to launch a nuclear missile strike on the United States when his boat came under attack during the Cuban Missile Crisis, thereby truly saving civilization and humanity as we know it.) Liberty, compassion and happiness are recurrently won or lost in history in alternation with periods of tyranny, cruelty and suffering. If it were otherwise, perhaps religion would fade away, as would poetry and art. But given our evolutionary makeup, that counterfactual world may not even be nomologically possible.

The evangelical cult, or self-proclaimed "atheist lobby," promulgated at the conference is itself a messianic mission to save humanity that fits well within the historical trend of

universal monotheisms, however atheist in appearance, including all the great secular and revolutionary "isms" that have violently punctuated modern history: colonialism, communism, fascism, anarchism, socialism, democratic liberalism. (Before monotheism, there was no notion of humanity in the sense of all humans being of a kind, and thus no idea of saving humankind for the "good," or of a recalcitrant and residual part of humanity rejecting salvation because they were "bad" and "evil"). Two of these "isms" - communism and fascism - were explicitly based on what were once seriously thought to be scientific theories and philosophies. These particular variants led to the greatest mass murders in human history. Although, this is only a N of 2, and a poor base of evidence for generalizing to the role of science in politics in general, it is still 100% more informed than most other views heard at the conference, and does not bode well for another push in this direction. (And by the way, politically tendentious teleological as well as social Darwinian views of human history and society are still very much with us, as in Francis Fukuyama's *The End of History* and *The Bell Curve* by Richard Herrnstein and Charles Murray.)

(4) A STRANGE IDEA: SCIENCE RITUALS TO REPLACE RELIGION. We heard from Carolyn Porco that science education, pure reasoning about existential problems such as death, and collective rituals to replace religious awe with the awe and wonder of science may help free us from religion and religious violence. But there is no evidence that any of these suggestions will work and some evidence they won't. For example, the Soviets vigorously denied religious education and promoted science education, but several survey studies indicate that about 50% remained religious nonetheless; and I find no shred of evidence that those who were atheist were more insightful or understanding of their neighbors or the world around them.

On death: A couple of thousand years ago Epicurus and Lucretius tried the sort of reasoning about death that Dr. Porco mentioned: since we did not care about not being alive for the indefinitely many generations that preceded our birth, why should we care about not being alive for indefinitely many generations after our death? Nobody bought the argument, of course. Developmental psychologists such as the late Giyoo Hatano and Harvard's Susan Carey show that "being alive" is cognitively learned and processed quite differently from "being dead" while decision theorists, such as Danny Kahneman and Amos Tversky, have repeatedly shown that loss (e.g., dying) is processed very differently from gain (e.g., becoming alive). In any event, in our own experiments we find that the visceral prospect of death does promote religious sentiments among all segments of the general population (whether institutionalized or not; for instance, crossing your fingers or simply hoping beyond reason when you experience severe turbulence on a plane flight).

On rituals: 19th century French positivists proposed very much what Dr. Porco proposes in terms of awe-inspiring ceremonies and even temples to science. Apart from the few who founded these practices and artifacts, the attempt failed utterly to woo any significant portion of the general population, or even make further inroads among the scientific community. Most scientists rightly thought these efforts were artificial and absurd. Most religious people thought the same.

No society in recorded history has ever survived more than about three generations without a religious foundation. Western Europe, many tell me, is about to buck the trend. Now, I'm not one for predicting the future (such predictions almost always range between zero and chance) but I do think that there was something prescient in a statement that

André Malraux - the great French writer, resistance fighter, government minister and avowed atheist - said towards the end of his life, in the early 1970s, when religion appeared to be waning across the world, falling into the divide between the clashing secular ideologies that mostly covered the world: "The next century will either be religious or it won't be."

(5) IGNORANCE OF ISLAM IN GENERAL. We first heard from Steven Weinberg, and then from every other second speaker, about the history of Islam, about why Muslim science went into decline after the 13th or 14th centuries, and about why suicide bombers, the most fanatically religious of all would-be mass murderers, are an outgrowth of Islam. But to use one of professor Dawkins's favored expressions, "this is rubbish." None of these commentators has shown the slightest understanding of Islamic history other than the same Classic Comics summaries of names and achievements.

Why would Islam first cause science to flourish and then decline unto suicide bombing? (One might note that Chinese science, too, went into decline relative to the West after the 14th century, but is now rapidly catching up; and that until recently the most prolific group of suicide bombers was the nominally Hindu but mostly secularist Tamil Tigers.) No mention was made of the fact that Islamic science, indeed, Classical Arab civilization, collapsed primarily because of massive invasions of Mongols and other Asiatic hordes; we've heard only the wholly unsupported claim that religion has had something to do with it.

We heard from Sam Harris that Muslims represent less than 10% of the population in Western European countries such as France, but over 50% of the prison population. The obvious inference expected from the audience is that Islam encourages criminal behavior. But what is not reported is that Muslims in the U.S. are as underrepresented in prison populations, as are U.S. Jews, and that the predictive factors for Muslims entering European prisons are almost exactly the same for African Americans entering U.S. prisons, namely lack of: employment, schooling, political representation, and so forth. Moreover, religious education is a negative predictor of Muslims entering European prisons. In our global jihadi database, which we are developing under a defense department contract, and which is perhaps the most comprehensive open source database on the subject, we find that most jihadis are "born again" and come to religion late in life, and only very seldom through mosques or madrassahs. And among jihadis outside Europe, and in particular suicide bombers, science education is a strong positive predictor (the most representative educational categories of suicide bomber - a finding independently confirmed by Oxford sociologist Diego Gambetta- are engineer and physician, be it for Al Qaeda or Hamas).

Sam Harris and others at the conference tells us that suicide bombers do what they do in part because they are fooled by religion into seeking paradise, which includes the promise of 72 virgins. But neither I nor any intelligence officer I have personally worked with knows of a single such case (though I don't deny that their may be errant cases out there). Such speculations reveal more the sexual fantasies of those who speculate rather than the actual motives of suicide bombers. All leaders of jihadi groups that I have interviewed tell me that if anyone ever came to them seeking martyrdom to gain virgins in paradise, then the door would be slammed in their face.

Richard Dawkins tells us that Islam oppresses women. While also condemning the terrible



asymmetries between men and women in many Islamic societies, I would only note that the subordination of women has relatively little to do with religion per se and much more to do with the kinship structure of Arab society. Arab social structure and cultural identity are built around a patrilineal lineage system that passes rights, obligations and duties exclusively through the father's line. Genealogies, however fictive, are traced back centuries to justify power and prestige. Any suspicion cast on any woman's honor anywhere in the genealogy can undermine the whole line. That is the principal consideration behind what is to most of us an intolerable subjugation of women, including the grotesque practice of "honor killing. Granted, Arab kinship is incorporated into Islamic canon, but belief in God really has nothing much at all to do with it.

(6) IGNORANCE ABOUT SUICIDE BOMBERS IN PARTICULAR. Let me say something more here about suicide killers, because they were brought up at the conference again and again as those religious foils who best justify the establishment of a new lobby of reason. Unlike others at the conference, I actually study and know first hand something about such people because I have interviewed a number of would-be suicide bombers, failed suicide bombers, families of successful suicide bombers and leaders of organizations that sponsor suicide attacks, from the cities of Western Europe to the jungles of Southeast Asia.

First some contrary facts: it is wrong that suicide bombers are invariably Islamic. In fact, the single most prolific group of suicide attackers has been the Tamil Tigers of Sri Lanka, an avowedly secular movement of national liberation whose major constituency is nominally Hindu. True, since 2001 the overwhelming majority of suicide attacks have been sponsored by militant Muslim groups, but there is little if any precedent in Islamic tradition for suicide terrorism. As for the "tremendous pride" that invariably trumps parental love, which Sam Harris posits as a trivial truth about the families of Palestinian suicide bombers, I have yet to meet a parent who would have done anything in his or her power to stop their child from such an act, but none I talked to ever knew and few ever imagined their child doing such a thing.

Here's a diary entry from my interview in Gaza's Jabaliyah refugee camp, in September 2004, with the parents of Nabeel Masood, a 16-year-old who exploded himself in the Israeli port of Ashdod the previous April. Nabeel's mother was reading a letter from her son's high school head master when I walked in the door; she was crying although her son had already been dead for months. She handed me the letter. It read:

"Mr. and Mrs. Masood, it gives me great pleasure to inform you that your son Martyr Babeel[sic], has passed his tests successfully in the 11th grade. He was first in his class. He was distinguished not only in his hard studying, sharing, and caring, but also in his good morals and manhood. I would really like to congratulate you for his unique success in both life and the hereafter. You should be proud of your son's martyrdom."

Shortly before the attack, Nabeel had received word that he had received a scholarship to study in England, but the two cousins he most loved were then killed in an Israeli raid, so he went to the Mosque and prepared himself to die. I asked his father, "Do you think your son's sacrifice will make things better?" "No," he said, "this hasn't brought us even one step forward." I asked him if he was proud of what his son had done. He showed me a pamphlet, specially printed by Al Aqsa' Martyrs Brigades and endorsed by Hamas, praising the actions of his son and the two other young men who accompanied him. "Here, you take it," he pushed the pamphlet into my hands, "burn it if you want. Is this worth a son?"

The reaction of Nabeel's parents was typical. Although the plural of anecdote is not data, the preceding is illustrative of a wider trend.

Earlier that month, Sheikh Hamed Al-Betawi, spiritual leader of Hamas, told me in Nablus: "Our people do not own airplanes and tanks, only human bombs. Those who undertake martyrdom actions are not hopeless or poor, but are the best of our people, educated, successful. They are intelligent, advanced combat techniques for fighting enemy occupation." The statistics that I and others have gathered confirm much of what he says - most Hamas suicide bombers, for example, are college educated and come from families that are economically better off than their surrounding populations. Neil de Grasse Tyson was quite right in asking whether suicide terrorism would disappear as a weapon of choice if other arms were available.

Despite atavistic cultural elements, global jihadism is a thoroughly modern movement filling the popular political void in Islamic communities left in the wake of discredited western ideologies co-opted by corrupt local governments. Jihadism's apocalyptic yearnings and born-again vision of personal salvation through radical action are absent from traditional Islamic exegesis. Nor does Islam per se or "Muslim civilization" really have anything to do with terrorism - no more than some impossibly timeless or context-free notion of Christianity, Judaism, Hinduism or Buddhism can be held responsible for the dead millions these religious traditions have been blamed for.

Appeals to Muslim history and calls for a revival of the Caliphate are heartfelt, though to some extent jihadism is also a counter-movement to the ideological and corresponding military thrust ensconced, for instance, in the National Security Strategy of the United States, which enshrines liberal democracy as the "single sustainable model of national development right and true for every person, in every society." In "defense of civilization" (the words used in the NSS document) the United States allots more money to military endeavors than do all of the other nations of the world combined, and has a military presence in over 100 other countries (a majority of the earth's nations). Although the U.S. claims never to target innocent civilians, and characterizes their deaths as "collateral damage," across cultures people generally pay attention to consequences rather than motives (most Americans have little sympathy for or desire to know what motivated the 9/11 attackers). For this vantage, it is legitimate to ask whether the greatest danger to world peace comes from religiously-inspired terrorism or from the overreaction to it.

As matters now stand, threats from terrorism in general, and religious terrorism in particular, are greatly exaggerated. A generation ago, at the height of the Cold War, the Soviet Union had the power to annihilate half of the U.S. population in a matter of minutes. Today's terrorists do not remotely pose such an existential threat. Al Qaeda is practically dead. Most of those close to Osama bin Laden are gone, in custody or in solitary hiding. Al Qaeda itself has not had a successful operation in nearly 4 years and its remainder does not know who most of the new terrorists are and cannot reliably communicate with those they do know. Only we can do grievous harm to ourselves by taking the terrorists' bait and reacting in ill-conceived and uncontrolled ways that inflate and so empower our enemies, alienate our friends, and frighten our own citizens into believing that they must give up basic liberties or root out religion in order to survive.

(7) FACE YOUR OWN RESPONSIBILITY FIRST. Scientists are emotionally and

intellectually no better able than most ordinary folk to manage or dominate the unending cycle in which changing knowledge - including space age wonders - interacts with human needs that have not changed appreciably since the Pleistocene Stone Age. But given the power that scientists have, they are much better able than most ordinary folk to cause great harm and suffering by direct attempts to manage and guide the future. At the very least, scientists should first pay attention to the consequences of their discoveries not only for the betterment but also for potential worsenings of the human condition, however unintended.

I have heard some scientists here deride other scientists for accepting research funds from foundations that attempt to reconcile religious sentiments with science. But does anyone here seriously explore the extent to which even basic scientific research is funded to advance a nation's political and military objectives? In fact, the framework within which much, if not most, basic research is funded is clearly political. Just read the annual reports for the legislative oversight of the National Science Foundation, National Institutes of Health or their counterparts in other nations where science is well developed. The theory of generative grammar was elaborated to a significant extent under funding from the Office of Naval Research, and the Templeton Foundation has funded some of the most original and reliable work on the evolutionary underpinnings of religious practice and belief, including the role of counterintuitive beliefs in human memory. Does this mean that research from such funding is likely to be tainted or suspect? Of course not.

(8) FACING THE WRONG ISSUE. If scientists do believe that they are ethically bound to improve the lot of ordinary people, or at least to decrease violence and increase possibilities for the pursuit of happiness, as I do, then perhaps the greatest challenge - and one that has been wholly overlooked here - is "how do we as scientists advance reason in an inherently unreasonable world?" This is a very difficult issue and one that cannot be seriously addressed by simply trying to muscle science and reason into everyday or momentous human affairs. I am privy to hostage negotiations: and simply telling hostage takers their beliefs are bullshit will get you the opposite of what you want. Of course, that's an extreme case; but reason by backward induction towards the less extreme cases in the actual political and social conditions of our present world and you will find that the tactics proposed at the conference for an unlikely strategic shift in humankind's thinking will most probably blowback and backfire. And I almost thank God that even the best of our scientists are not prominent political negotiators or policymakers.

It is my conviction, informed by some years of anthropological fieldwork, psychological experimentation and political negotiations, that reason in the sense of consistent argumentation from evidence and logic is only one of several cognitive tools that humans are endowed with in order to navigate the physical and social world they live in " very good for finding the hidden springs and causes of the world around us but pretty bad for morally deciding what to do about what we find. More often than not, reason - as David Hume so cogently put it - "is and ought only to be a slave of the passions." In any event, this conference has most instantiated this sentiment.

Some in the audience spontaneously applauded when I posed the question, "how do we as scientists advance reason in an inherently unreasonable world?" including many of the scientists present. That is just anecdotal evidence that professor Dawkins's and Mr. Harris's positions are not thoroughly representative of science or scientists in regard to religion and to the respective roles of religion and science in politics and ethics. But given the selective

nature of the audience, their positions may be even less representative than the media has made them out to be, and so you should not despair.

Finally, I don't think Dr. Tyson's position on these matters is quite what you think. He and Lawrence Kraus seemed to me very skeptical about the wisdom or prospect of implementing Steven Weinberg's *Alice in Wonderland* call for science to save humanity from "the long nightmare of religion." The nightmares but also the dreams will very likely remain a good part of what it means to be human, despite any hope to wish them away.

Cheers,  
Scott Atran