

Comment

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Gregory A Petsko

Address: Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, MA 02454-9110, USA.
E-mail: petsko@brandeis.edu

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I was in a car driving past the Pentagon about an hour before the hijacked plane hit it. By the time it hit, I was at the National Science Foundation, a mile or two away. The first indication that something horrible was happening was an NSF staff member who told us that an airplane had just crashed into one of the towers of the World Trade Center. My first thought was that a terrible accident had occurred. Eighteen minutes later, when the second plane plowed into the other tower, we all knew that it was no accident. Death had come out of the sky, not by chance, but by the malevolent design of evil men. When the towers collapsed, one after the other, in an eerily quiet, vertical fall that resembled the controlled implosion of a derelict hotel, the casualty list included more than the passengers and crew of the aircraft, the office workers in the buildings and the heroic firemen and policemen who had rushed inside to aid in the evacuation. Dead also was our American sense – false as it may have been – of isolation from the madness welling up in remote parts of the world, and of invulnerability by virtue of that isolation and our mighty technology. In a few terrible seconds, our world changed into an infinitely more frightening and unpredictable one.

Thus far I have resisted the urge to stare endlessly at the images of the planes crashing and the towers collapsing. They have a strange video-game or disaster-movie quality, almost as though they were staged as part of some monstrous entertainment. It is the individual stories that drive the reality home: the man who got out safely from one of the towers, only to go back in to help others escape; he died with them when the building fell. The man who didn't go to work that day because he had to drive his daughter to day-care; all 700 employees of the company he owned perished. The con artists who, within a day of the tragedy, began soliciting donations from gullible elderly people for fake charities to aid the victims. Or the fundamentalist preachers who immediately claimed that this horror – which, they seem to forget, was visited impartially on the devout as well as on non-believers – was divine punishment for a society that they

claimed had become increasingly secular. But as we mourn the dead, try to comfort the bereaved, and look for answers to the questions of who did this for what possible, twisted reason, there are a few things that seem clear.

One is that this should put forever to rest the notion that our behavior is completely, or even largely, determined by our genes. Genetic makeup does not direct a person to kill himself deliberately for no more advantage than the possible glory of martyrdom for a pseudo-religious cause. It does not direct that same person to slaughter indiscriminately thousands of innocent men, women and children, including some who practice the same religion. These actions are prompted by warped ideas planted by evil people who desire power over others and the things such power can bring them. They are the result of conscious decisions made by human beings to act against the instincts for survival and nurture that our genome does give us. Neither does our genetic makeup direct us to put our lives at risk by rushing into a flaming skyscraper to fight the fire or help others to escape. It does not direct us to give our blood or our time to aid the injured and displaced. These actions are prompted by noble ideals that have evolved as we have sought to free ourselves from the strictures of our nature. They are the result of conscious decisions made by human beings to act for something larger than themselves. And if we can so easily go against our genetically programmed instinct for survival, for good or evil purposes, then there is hope that we can in time learn to overcome our instinct for violence, and our instinct for greed, and our instinct for selfishness.

The second conclusion I draw from these awful events is that our quest to understand ourselves, which is what prompted the human genome project in the first place, has never been more important. People do abominable things for many reasons, but one reason is that they have been led to do so by their belief in what is untrue. Science has as its goal the discovery of the way things really are, and there is no better weapon against the sort of misinformation and perverted

philosophy that led to the terrorism of September 11, 01. Of course, to be an effective weapon, the results of our work must be freely available and must also be explained to those who are not scientists in the clearest and least patronizing fashion. Only then can science displace the lies and half-truths that are used to shape the minds and hearts of people desperate to understand. Put another way, we've tried everything else: maybe it's time we tried the truth.

It was a man of exceptional grace, courage and intelligence who uttered the words that I find the most comforting at this time. Mohandas Gandhi said, "When I despair, I remember that, all throughout history, the way of truth and love has always won. There have been tyrants and murderers and for a time they can seem invincible, but in the end they always fall. Remember this, always."