

Life After Death

Examining the Evidence

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Introduction

Dinesh D'Souza is a well-known right-wing policy analyst and author who recently has taken on the role of Christian apologist. He has a degree in English from Dartmouth. From 1985 to 1987 he was editor of *Policy Review*, a conservative journal published by the Heritage Foundation, now part of the Hoover Institution. He served as a policy adviser to the Reagan administration until 1988 and followed this with stints as a Fellow for the American Enterprise Institute and Hoover Institution.

D'Souza has assumed up the cause of Christianity with books, speeches, and high profile debates with famous atheists such as Christopher Hitchens, Daniel Dennett, Peter Singer, Michael Shermer, Dan Barker, and John Loftus. His recent books include *What's So Great About Christianity*¹ and, the primary reference for this essay, *Life After Death: The Evidence*.²

In *Life After Death* D'Souza insists that he is making the case for an afterlife purely on the basis of science and reason and not relying on any spooky stuff. He promises “no ghosts, no levitations, no exorcisms, no mediums, no conversations with the dead” and a case that “is entirely based on reasoned argument and mainstream scholarship” (18). Although he does not always stick to this promise, he does provide a good summary of arguments for life after death, some of which I have not heard before. So the book provides a good framework from which to discuss both the evidentiary claims and those others that rely more on extrapolations from observed facts. Page number references for *Life After Death*

will be given here in parentheses in the main text.

D'Souza revels in his role as a "Christian cage fighter," challenging "the honest and thoughtful atheist to consider the possibility of being wrong, and . . . open his mind to persuasion by rational argument" (17). I am perfectly happy to accept that challenge.

Life after death can be identified with the ancient notion that the human mind is not purely a manifestation of material forces in the brain but has a separate, immaterial component called the soul that survives the death of the brain along with the rest of the body. This is a hypothesis that can be scientifically tested. Evidence for its validity could be provided by a verifiable glimpse of a world beyond obtained while communicating with the dead or during a religious experience. All the believer claiming such knowledge has to do is provide some knowledge that she or no one else could have previously known and have that knowledge later confirmed. Let us investigate whether such evidence has been produced.

False Advertising

D'Souza begins his second chapter by accusing atheists for engaging in false advertising when they say there is no reason to believe in an afterlife. Their view is based, as is most disbelief, on the absence of evidence. D'Souza asserts, "The atheist has no better proof that there isn't life after death than the believer has that there is" (22). He says that new atheists Sam Harris and Richard Dawkins reject the afterlife "on the basis of no evidence whatsoever" (23). The believer, on the other hand, has a reason to believe: "divine revelation as expressed in a sacred text." The believer is "trusting in what is held to be an unimpeachable source, namely God" (23). So much for basing his case on "reasoned argument and mainstream scholarship."

Of course, if we are to assume as a prerequisite for our discussion that God exists and he has revealed truths in the scriptures, then there is not much left to say and there would be no purpose in D'Souza's book or my essay. I am going to summarily reject D'Souza's assumption that God and revelation exist and

require that, along with the afterlife, they be demonstrated by empirical evidence.

None of the claimed prophetic revelations of the Bible have been confirmed and many have been disconfirmed. Independent historical and archaeological sources have already established that the most important stories of the Bible are myths.³ This is a long and contentious debate and I need not get into any of the details. Quite simply, if a scholarly consensus existed that biblical revelations were confirmed, then we again would have no need for this discussion. We would all believe in God and the afterlife for the same reasons we believe in neutrinos and DNA—a consensus among scientists and other scholars that there is sufficient empirical evidence buttressed by careful, objective, rational analysis.

D'Souza accurately quotes me as saying that life after death is a scientific question and that “no claimed connection with the hereafter has ever been verified... in controlled scientific experiments” (24). He also quotes a similar statement by the Nobel Prize winning biologist and co-discoverer of DNA, the late Francis Crick: If religious believers “really believe in life after death, why do they not conduct sound experiments to verify it?”⁴ D'Souza's weak response is that “most religious believers don't believe in the afterlife on the basis of scientific tests” (24). Surely they would believe with greater conviction, and many more would become believers, if such evidence were ever produced.

D'Souza further asserts, “There are no controlled empirical experiments that can resolve the issue either way” (24). Of course there are. Since the nineteenth century reputable scientists have been performing experiments to test the alleged powers of so-called psychics and mediums who claim to talk to the dead. Not a single report of communication with the dead has ever been verified.⁵ Once again, just have the psychic tell us something he and we did not know that later was verified. Suppose a medium speaking to the dead Isaac Newton in 1890 came back with the information that a weapon of immense power would destroy two cities in 1945. Then we would be forced to believe in a world beyond, whether we liked it or not.

Absence of Evidence

D'Souza refers to what he calls the "popular atheist slogan," "The absence of evidence is evidence of absence" (25). D'Souza objects, arguing that "not found" is not the same thing as "found not to exist." Of course this is true and atheists agree. In fact, legendary atheist Carl Sagan was often quoted as saying, "absence of evidence is not evidence of absence." However, I claim that absence of evidence can be evidence for absence, *when the evidence should be there and is not found*. We can apply this principle to the question of life after death. There should be evidence and there isn't any.

D'Souza points out that scientists believe in the existence of many things that are undetectable by scientific instruments, such as the "dark matter" and "dark energy" that pervade the universe (27). However, if these exist we can expect that eventually they either will be detected or falsified. In the meantime, we have indirect evidence that is sufficiently robust for us to include these two components in our models until new data should rule otherwise.

This is a common circumstance in physics. For example, physicists in the late 1920s discovered missing energy in nuclear *beta-decay*. The more parsimonious hypothesis, proposed by Wolfgang Pauli, was that a previously unknown particle is emitted in the reaction even though that particle was not directly detected. Enrico Fermi dubbed it the *neutrino*. The less parsimonious alternative was a violation of the fundamental physical principle of energy conservation. It was not until 1956 that the neutrino was detected in an experiment conducted by Fred Reines and Clyde Cowan. They observed the reverse beta-decay process induced by neutrinos from a nuclear reactor.

So D'Souza is right that scientists do accept the possibility of phenomena that are not directly observed. But they at least demand some indirect evidence before they are taken seriously. In the case of dark matter and dark energy, both are postulated to explain observed gravitational and astronomical effects that are otherwise unexplained. While alternate explanations might yet be found, these two substances of still unknown (but still clearly material) nature currently provide the simplest known account for what is observed. We will see if we have

comparably strong indirect evidence for life after death.

A Common Belief

It is a well-known fact that a belief in immortality has been common, although not unanimous, among many cultures throughout history. D'Souza takes this as further "evidence" that life after death exists, once more breaking his promise of rationality. This is like saying that, since a belief that the world is flat was common among all cultures throughout history, it follows that the world really is flat.

D'Souza also tries to dispose of the common atheist argument that, with so many different religions in the world having such diverse ideas about God and the hereafter, how does one know his particular belief is the correct one? It is a fact that the overwhelming majority of people practice the religion of the family and culture into which they were born. Yet most are sure theirs is the "true religion" while all others are false. As atheists like to say to believers, "We are not that much different. You believe every religion but yours is bunk. I just believe one more religion is bunk than you do."

D'Souza admits that many religions have different views of the afterlife that depend on their geography and culture. Muslims imagine heaven as a desert oasis. American Indians envisage Happy Hunting Grounds full of deer and buffalo. Vikings believed that their eternity will be spent in Valhalla, where they will do battle every day and have a drunken feast every night (37-38). And, of course, the views of the afterlife in Eastern religions are widely different from these, often focused on reincarnation, a totally alien form of an afterlife compared to that imagined in the West.

Nevertheless, D'Souza asserts, "the presence of disagreement in no way implies the absence of truth" (18). It sure does. He tries to show that the differences are not so great. Basically, he asserts, there are just two types of immortality. In the Eastern version, the soul reunites after death with some transcendent and ultimate reality, losing its individuality. The Western view, on the other hand, is one of individual bodily resurrection (36). They both can't be

right.

D'Souza refers to a scholarly study by Alan Segal showing that every culture in history has had some concept of continued existence.⁶ I have read Segal and what strikes me is the vast variety of belief. You would think that if humanity had some revealed facts about the afterlife there would be more agreement. Still, D'Souza insists, humans possess a religious impulse that is rooted in a "sense of the numinous," that "there is something terrible and awe-inspiring and sublime about existence that seems to derive from another kind of reality." Death, then, is the link between two realities: the world we live in and a more permanent "world beyond the world" (42). Those more in touch with reality may conclude it derives from fear of death.

D'Souza makes the interesting observation that each of the three Abrahamic religions—Judaism, Christianity, and Islam—have two different teachings about immortality. The official teaching is bodily resurrection while the "more contemplative types" hold an unofficial view of the immortality of the soul derived not from biblical or Qur'anic sources but Greek philosophy. D'Souza tries to make atheists look like dunces for not being aware of this fact—as if none of us ever heard of Plato. Typically, he does not quote any atheists specifically.

While the Torah, the first five books of the Old Testament, contains no mention of an afterlife, immortality was adopted into Judaism sometime before the first century BCE. While Plato held that the soul escapes the body after death, the Persians introduced the notion that the whole person, body and soul, survives death, which view the Jews then adopted.⁷ This idea was adopted in turn by Christianity and Islam, and given a much more central role than it has in Judaism.

The enormous Greek influence on Christianity that was initiated by Paul (The New Testament was written entirely in Greek) led many Christians to adopt the Greek view that only disembodied souls survive death (46). With the Copernican revolution in the Middle Ages, heaven was no longer a place beyond the stars and hell was no longer inside Earth but rather these were viewed as immaterial places inhabited by immaterial souls. Nevertheless, bodily

resurrection is still anticipated by both D'Souza's Catholic Church and many Protestant sects. Some Protestant churches, such as former vice-presidential candidate Sarah Palin's Pentecostal Church, take seriously the Book of Revelation in which the Son of Man (assumed to be Jesus) returns to rule the Kingdom of God on Earth. Earth is still the center of the universe to these believers and the inhabitants of the new kingdom will all have perfect but still fully material human bodies. Why else would the bodily resurrection of Jesus be so important?

But D'Souza is espousing a far more sophisticated picture of the afterworld (47-48). He adopts Augustine's view that God created time along with the universe and is himself outside of time. Later Christian theologians formulated life after death as being lived in an eternal realm disconnected from space and time. Actually, this realm should not even be characterized as "eternal" since that is a temporal term. It's kind of a constant "now." Thus D'Souza notes, "Christianity since Augustine does not espouse life after death, but rather life 'beyond' death" (48). I am not sure of the difference.

Of course, this is the Christianity of theologians, not the faithful in the pews. Nevertheless I am on the same page here with D'Souza, who is trying to justify life after death on rational grounds. Atheists can agree to discard (and stop ridiculing) popular notions of an afterlife featuring eternal harp music in heaven and eternal bagpipe music in hell.

However, D'Souza is not willing to give atheists similar leeway. He asserts, "Contrary to what atheists say, the belief in the afterlife is not merely a Western idea; it is a universal idea." (51) What atheists say this? Once more he quotes none and gives no references.

Of course atheists know that life after death is an Eastern as well as Western idea. D'Souza admits that they are quite different, so somebody must be wrong. He correctly notes that a "new" understanding of Hinduism was instituted in the Upanishads, a philosophical work from 2,500 years ago called Vedanta or "post-Vedic" Hinduism:

According to the Upanishads we live in an unreal world that we

mistake for the real one. . . But this is the trick of “maya,” or illusion, and it is a trick that uses the mirrors of space and time. Actually, reality is entirely different from what our senses perceive. We experience objects in the world as differentiated and we think of ourselves as individual souls separate from the world. But if we could see behind the mirrors of experience, if we could somehow lift the veil, we would realize that reality preserves none of these distinctions. In reality, everything is one (50-51).

So, in the Upanishads, we break out of the endless cycle of reincarnation by realizing that “our individual souls are identical with the oneness of ultimate reality” (51). At least this solves a lot of problems, such as where do all those souls go? They all merge into one.

Buddhism adopted the Hindu notion of reincarnation, which is yet another idea of an “afterlife,” for souls that hadn’t yet “achieved enlightenment” (and thereby merged with the One). While it changed a lot of details, Buddhism recognized that “the very concept of ‘I’ is illusory” (51). This is also an important insight that most of the world, including many Buddhists, never learned.⁸

Although D'Souza says, as I quoted above, that belief in the afterlife is a universal idea, he has to admit it is not unanimous. After all, at least a billion and maybe two billion living people don't believe in it. He identifies three rival perspectives: (1) survival without the body; (2) survival of the whole person, body and soul together; and (3) denial of an afterlife. I would split (1) into two further perspectives, East and West. As we saw above, we have the Eastern view of the disembodied soul undergoing reincarnations in new bodies and then eventually merging into a single ultimate reality, while in the Western view the soul, even without a body, remains individually differentiated. Christians who don't believe in bodily resurrection but in a heavenly realm beyond space and time still expect to meet their departed loved ones and pets there as individual souls. Interestingly, this difference between East and West is a

characteristic of their cultures, with individualism a prime trait of Americans and Eurasians while East Asians place more emphasis on everyone harmonizing with their culture.

This illustrates how religious beliefs are heavily determined by culture, making their connection with any ultimate truth problematical. Even Asian beliefs in heaven or hell (such as in Confucian religion) correspond to their cultural expectations and thus differ substantially from Western notions. In fact, all beliefs in an afterlife have plausible origins in evolved features of the brain, which naturally cause us to separate minds from bodies conceptually (because it is practical to), and then we erroneously attribute this conceptual distinction to physical reality.⁹ An error everyone evolved to make cannot support the conclusion that what's erroneous is true.

Now it is time to talk science and examine the claimed empirical evidence for life after death.

Problems with the Paranormal

A huge literature exists claiming scientific evidence for life after death. This literature suffers from all the same problems we find with paranormal studies in general.¹⁰ Much of it is anecdotal, and virtually useless scientifically since we have no way of checking the veracity of such testimony. Only carefully controlled experiments that provide risky tests of the hypothesis of life after death will convince the scientific skeptics, and until the skeptics are convinced the hypothesis will remain unproven. Despite the common charge, skeptics in science are not dogmatic. They will readily follow where the evidence leads.

While paranormal studies often involve controlled experiments, few meet the stringent standards found in the basic sciences. For example, positive effects are often claimed at such a low level of statistical significance that a simple statistical fluctuation would reproduce the observation as often as once every twenty times the experiment is repeated, $p = 0.05$. In this case, one must accept the more parsimonious explanation that the effect was a statistical artifact rather

than the occurrence of a miracle. While $p = 0.05$ is often used in biomedical research, such a weak criterion is unacceptable in those sciences that deal with extraordinary phenomena. For example, in physics a claimed new effect is not publishable until it is shown that it would not be reproduced as a statistical artifact once in ten thousand cases, $p = 0.0001$. While I can sympathize with the need for medical researchers to try any promising therapy in order to save lives, I still think that they would do better and avoid useless effort by setting their limit to $p = 0.01$.

Attempts have been made to use a technique called *meta-analysis* to try to glean statistically significant results from individually insignificant data.¹¹ This is like Ronald Reagan's old joke about the kid on Christmas morning digging through a pile of horse manure since, "There has to be a pony in there somewhere." The procedure is totally unreliable and a waste of time in searching for a phenomenon not evident in individual experiments.¹² While meta-analysis can be useful for discerning trends, it must be used with great caution. I cannot think of a single major discovery in science that has been made with meta-analysis.

For over 150 years investigators have claimed evidence for paranormal phenomena such as extrasensory perception or mind over matter without a single positive result that has ever stood up to the same critical scrutiny applied in the mainstream sciences whenever an extraordinary event is observed. Observing evidence for life after death would be extraordinary indeed. Needless to say, none of the dead have ever communicated any verifiable knowledge to us. If they did, then we would all be believers.

Reincarnation

Recently the subject of reincarnation has attracted scientific attention. Like psychic studies, we find in this area a minefield of unsupported claims and lucrative hoaxes, such as the infamous fifty-year old case that resulted in a best-selling book *The Search for Bridey Murphy* by Morey Bernstein.¹³ Although thoroughly debunked,¹⁴ Bernstein's book has gone through four editions, the

most recent appearing as late as 1991.

The reincarnation debate was taken to a more serious level by the work of psychiatrist and University of Virginia professor Ian Stevenson. Deepak Chopra, in his 2006 book on immortality, *Life after Death: the Burden of Proof*, cites Stevenson as providing strong empirical evidence for reincarnation.¹⁵

Over the years Stevenson collected thousands of cases of children in India and elsewhere who talked about their “previous lives.” Many seemed quite accurate and sometimes the child had marks or birth defects that corresponded closely to those of the deceased person the child claimed to remember.¹⁶

Leonard Angel has written a review of Ian Stevenson’s monumental two-volume tome *Reincarnation in Biology*.¹⁷ Angel says, “Close inspection of Stevenson’s work shows that time after time Stevenson presents tabular summaries that claim evidence was obtained when, in fact, it was not. . . . Stevenson’s case, irreparably, falls apart both in the presentation of evidence and in his analysis of evidence supposedly obtained.”¹⁸

Even D’Souza is skeptical of Stevenson’s results. He remarks that, growing up in India he can easily see how “families might conspire to produce the appropriate ‘evidence’” (60). Their religiously anointed children become celebrities. He concludes, “reincarnation is possible but unlikely” (60). For a complete critical analysis of reincarnation see the book by Paul Edwards.¹⁹

Near-Death Experiences—Historical Data

Apologists such as D’Souza put much more stock in the results of studies involving *near-death experiences* (NDEs) that have attracted a large number of investigators and even a peer-reviewed journal of its own, the *Journal of Near-Death Studies*. Janice Miner Holden, EdD, Bruce Greyson, MD, and Debbie James, MNS, RN have provided a comprehensive handbook on NDE research. They begin with a review of thirty years of research on the subject, which I will briefly summarize.²⁰

By the early 1970s, resuscitation technology had advanced to the point where many more people were being brought back from the brink of death than ever

before in history. Perhaps 20 percent reported experiences of what they were convinced was another reality, a glimpse of “heaven.” These reports began to get the attention of nurses and physicians. In 1976, medical student Raymond Moody published a book about these phenomena called *Life After Life* where he coined the term “near-death experience” or NDE. Moody’s book became a sensational best seller, with 13 million copies sold by 2001.²¹

Holden et al list a number of earlier references in popular, medical, and psychical research and many publications since 1975. Almost all of these reports are anecdotal, (a designation the authors avoid in favor of the term “retrospective”) and are hardly likely to convince skeptics and mainstream scientists that they provide evidence for an afterlife. However, it can be safely concluded from these anecdotes that the near-death-experience itself is a real phenomenon, somewhat like a dream or hallucination, but perhaps not exactly the same. The issue is whether they provide any real evidence for an afterlife.

In her 1993 book on near-death-experiences, *Dying to Live*, psychologist (and reformed parapsychologist) Susan Blackmore proposed that the phenomenon was the result of loss of oxygen in the dying brain.²² Many features of the NDE can be simulated with drugs, electrical impulses, or acceleration such as during ride in a centrifuge used for training fighter pilots. Professional anesthesiologist Gerald Woerlee thoroughly confirms these findings in his 2003 book *Mortal Minds*.²³

Despite finding no reliable evidence, Miner et al. are not quite ready to give up their quest of the afterlife. In their summary of the handbook, the editors say:

If it appears that the mental functions can persist in the absence of active brain function, this phenomenon opens up the possibility that some part of humans that performs mental functions might survive death of the brain.²⁴

Nevertheless, they have to admit, “no single clear pattern of NDE features has yet emerged.”²⁵

Veridical NDEs

From my viewpoint as a research scientist, only veridical NDEs are worth studying. These are NDE experiences where the subject reports a perception that is later corroborated.²⁶ Researchers also define *apparently nonphysical veridical NDE perception* (AVP) as veridical perceptions that apparently could not have been the result of inference from normal sensory processes.²⁷ These would provide the kind of evidence for consciousness independent of the body that we might begin to take seriously.

In chapter 9 of the handbook, editor Holden reviews the attempts to verify AVP under controlled conditions. You would think the setup should be simple. Place some kind of target such as a card with some random numbers on it facing the ceiling of the operating room so that it is unreadable not only to the patient on the table but to the hospital staff in the room. Then if a patient has an NDE that involves the commonly reported sensation of moving outside her body and floating above the operating table, she should be able to read that number. These out-of-body experiences (OBE) are not always associated with NDEs and they are treated as independent phenomena that also imply the existence of a soul independent of the body.

Holden reported that this ideal situation is difficult to achieve with the operating room staff often glimpsing the target information thus compromising the protocol. She reports on five studies that were conducted with proper controls. She concludes, "The bottom line of findings from these five studies is quite disappointing: No researcher has succeeded in capturing even one case of AVP."²⁸ Note that Holden reveals her personal desires in this quotation. If she were a skeptic she might have called the result "gratifying." In either case it's best to keep an open mind.

Holden tells of receiving an e-mail from prominent NDE researcher Kenneth Ring:

There is so much anecdotal evidence that suggests [experiencers] can, at least sometime, perceive veridically during NDEs ... but

isn't it true that in all this time there hasn't been a single case of a veridical perception reported by an NDEr under controlled conditions? I mean, thirty years later, it's still a null class (as far as we know). Yes, excuses, excuses—I know. But, really, wouldn't you have suspected more than a few such cases *at least* by now?²⁹

Maria and the Shoe

Dinesh D'Souza is deeply impressed by NDEs, saying, “On the face of it, they provide strong support for life after death” (64). Few researchers in the field have gone so far.

D'Souza tells us of the case of a Seattle woman named Maria who experienced an NDE after a heart attack. She told a social worker Kimberly Clark that she had separated from her body and floated outside the hospital. There she saw a tennis shoe with a worn patch on the third floor ledge near the emergency room. Clark checked the ledge and retrieved the shoe.³⁰

However, there is no independent corroboration of this event. We only have Clark's report. No one could ever trace down Maria to corroborate her story. We have to take Clark's word for it. Later investigators found that Clark had embellished the difficulty of observing the shoe on the ledge. Placing their own shoe in the same position they found it was clearly visible as soon as you stepped into Maria's room.³¹

The Blind Shall See

Probably the most sensational claims in NDE research involve blind people reporting out of body experiences in which they were able to see. I told the story of one such case in my 2003 book *Has Science Found God*, but it bears repeating.³² Physician Larry Dossey is the author of several popular books that promote spiritual healing such as prayer; I have clashed with him on occasion.³³ In *Recovering the Soul* he claimed that a woman named Sarah had a NDE in which she saw

a clear, detailed memory of the frantic conversation of the surgeons

and nurses during her cardiac arrest; the OR [Operating Room] layout; the scribbles on the surgery scheduling board on the hall outside; the color of the sheets covering the operating table; the hairstyle of the head scrub nurse; the names of the surgeons on the doctors' lounge down the corridor who were waiting for her case to be concluded; and even the trivial fact that the anesthesiologist that day was wearing unmatched socks. All this she knew even though she had been fully anesthetized and unconscious during the surgery and the cardiac arrest.³⁴

And, on top of that, Sarah had been blind since birth!

Ring and Cooper report that, when asked by other investigators to give more details, Dossey admitted this was a complete fiction.³⁵ Susan Blackmore also uncovered Dossey's fabrication.³⁶

Ring and Cooper state that Blackmore "reviewed all the NDE evidence and concluded that none of it holds up to scrutiny." According to Blackmore, "there is no convincing evidence of visual perception in the blind during NDEs, much less documented support for veridical perception."³⁷ Ring and Cooper's later investigations also provide no veridical evidence.

Near-Death Experiences—Recent Data

Recently a new book on NDEs has appeared, *Evidence of the Afterlife: The Science of Near-Death-Experiences*, by MD Jeffrey Long "with" journalist Paul Perry.³⁸

Thanks to considerable media hype, this book moved quickly to the bestseller lists. Long is a radiation oncologist and with his wife Jody gathered thousands of accounts of near-death experiences. They did this by setting up a website asking for personal narratives of experiences. Besides providing their personal story, respondents filled out a one-hundred-item questionnaire "designed to isolate specific elements of the experience and to flag counterfeit accounts." The result is the largest database of NDEs in the world with over 1,600 accounts.

Long claims that medical evidence fails to explain these reports and "there is only one plausible explanation—that people have survived death and traveled to

another dimension.” After studying thousands of cases, Long concludes: “NDEs provide such powerful scientific evidence that it is reasonable to accept the existence of an afterlife.”³⁹

In fact, there is little or no science in Long’s book. It is based totally on anecdotes collected over the Internet where you can find limitless, unsupported testimonials for every kind of preposterous claim. I do not insist that all anecdotes are useless. They can point the way to more serious research. But when they are the *only* source of evidence they cannot be used to reach extraordinary conclusions. To scientifically prove life after death is going to require carefully controlled experiments, not just a lot of stories. The plural of anecdote is not “data.”

The question raised by near-death experiences is whether they provide evidence that mind and consciousness are more than just the product of a purely material brain. Such a conclusion contradicts the mass of evidence gathered in the neurosciences and will be accepted only when the data are totally convincing.

Problems with NDEs

There are several excellent books and papers presenting strong, detailed arguments showing why the data from NDEs does not provide any evidence for an afterlife. Besides Susan Blackmore’s *Dying to Live* and Gerald Woerlee’s *Mortal Minds* there is *Religion, Spirituality and the Near-Death Experience* by Mark Fox.⁴⁰ In 2007 Keith Augustine, the Executive Director of the Internet Infidels,⁴¹ published an exhaustive three-part series of articles in the *Journal of Near-Death Studies*.⁴² Each of these articles is accompanied in the same volume with several criticisms from researchers in the field followed by a response to those criticisms from Augustine. An updated, unified version of all three of Augustine’s papers is available on the Secular Web.⁴³

Let me mention just a few of Augustine’s observations, along with those of other researchers, that I found particularly compelling. I refer you to his paper to get the details and references to the original work he relies on.

- 80 percent of those who come as close to death as possible without dying

do not [recall having] an NDE. So it is not a common experience.

- Existing research presents no challenge to the current scientific understanding of NDEs as hallucinations.
- NDE studies, taken as a whole, strongly imply that whatever these experiences are, they are characterized by features that one would expect of internally generated fantasies, but not of any putative “disembodied existence.”
- As encounters with living persons repeatedly crop up in NDEs (one out of ten times), the less NDEs look like visions of another world and the more they appear to be brain-generated hallucinations triggered by a real or perceived threat to the experiencer’s well-being.
- The only NDE experiences that are common among all cultures are encountering other beings and other realms. Otherwise the details depend on culture.
- Electroencephalograms and imaging techniques indicate that epileptic activity in the temporal lobe of the brain, specifically the TPJ or temporo-parietal junction, consistently results in out-of-body experiences (OBEs). Furthermore, many of the experiences reported by epileptics and those who have had their temporal lobe electrically stimulated match those of OBEs. Since the TPJ is a major center of multisensory integration of body related information, it is not surprising that interfering with neural processing or cerebral blood flow in this area, or providing conflicting somatosensory inputs result in dysfunctional representation. This provides strong evidence that OBEs are brain induced and localized in the temporal lobe. As mentioned, OBEs are often but not always associated with NDEs.
- Despite repeated assertions of quite frequent paranormal abilities (healing powers, prophetic visions of the future) manifesting after NDEs, often endorsed by NDE researchers, no experiencer has had their alleged psychic powers tested in a controlled experiment. The prophecies have

been either vague or dramatically wrong. For example, in *Saved by the Light*, Dannon Brinkley reports his NDE and makes many predictions about the future.⁴⁴ The book was adapted in 1995 for a Fox Television movie starring Eric Roberts and was one of the highest rated television movies in that network's history.⁴⁵ Not one of Brinkley's predictions came to pass.

Many NDE researchers still hope to find evidence for an afterlife despite their own honest admission that the data, so far, are simply not there. Augustine is careful to note that NDE researchers' beliefs are not to be confused with their actual findings. From my own reading I would say that, while the great majority of NDE researchers are honest and do not hide data that fail to confirm their beliefs, they are hardly disinterested on the question of survival of death. Who wouldn't be motivated by the possibility of discovering an afterlife?

Several authors have suggested that NDEs cannot distinguish if a private experience is either a brain-based hallucination or a peek into the afterlife, and therefore that the afterlife hypothesis is not falsifiable. I claim this is wrong. They are like those who say science can never prove God exists. The existence of a realm beyond matter could be easily demonstrated by someone returning from an NDE, OBE or other religious experience with important information about the world that she or no one else could possibly have known, and then have that knowledge verified scientifically. With millions of such experiences yearly you would expect a few to result in verifiable knowledge if they had anything at all to do with an immaterial reality. So far none have, making this a strong, empirical argument *against* the existence of such a realm.

The Material Mind

Considerable evidence exists for the hypothesis that what we call mind and consciousness result from mechanisms in a purely material brain. If we have disembodied souls that, as most religions teach, are responsible for our thoughts, dreams, personalities, and emotions, then these should not be affected by drugs. But they are. They should not be affected by disease. But they are. They should

not be affected by brain injuries. But they are. Brain scans today can locate the portions of the brain where different types of thoughts arise, including emotions. When that part of the brain has been destroyed by surgery or injury, those types of thoughts disappear. As brain function decreases we lose consciousness, as when under full anesthesia. Why would that happen if consciousness arose from an immaterial soul? There is no objective evidence that brain function stops entirely during a reported NDE. That an NDE actually occurred during a flat EEG (rather than before or after) is often impossible to prove anyway. But even a flat EEG does not signal brain death, as many people mistakenly believe, since it just reacts to the outer portions of the brain and does not catch activity deep in the brain. If the properties traditionally attributed to the soul reside solely in the material brain and nervous system, then this is sufficient to rule out life after the death of the brain.

Cosmic Justice

One of the major reasons so many people seek an afterlife is they want to believe that the universe is just. In the East this is called the *law of karma*. Since life in this world is obviously unjust with many rewards for the wicked and few for the virtuous, reincarnation makes it all come out even. In the West justice is served not by a succession of lives but by a last judgment.

D'Souza has convinced himself that he has proven that humans occupy two domains of reality, the material/phenomenal and the spiritual/moral/noumenal. He interprets one of these realities to correspond to the way things are and the other to the way things ought to be. Science and its physical laws, he says, concern themselves only with the way things are. Moral laws tell us how they ought to be. Cosmic justice, according to this view, cannot be achieved in this world but only in another world beyond the grave. The recognition of this fact explains to D'Souza "why humans continue to espouse goodness and justice even when the world is evil and unjust" (167).

D'Souza asserts that humans are unique among entities in the universe, living and nonliving, in seeking "to repudiate the laws of evolution and escape

control of the laws of nature” (167). Why do we do this? Because we have made “the presumption of an afterlife and the realization of the idea of cosmic justice makes sense of our moral nature much better than any competing hypothesis” (168).

D'Souza calls this a “presuppositional argument.” A presupposition is a hypothesis that says, “This is the way things have to be to make sense of the world.” It is tested by asking, “How well does it explain the world?”(171). The specific hypothesis is: “There has to be cosmic justice in the world in order to make sense of the observed facts about human morality” (172).

So he is cleverly turning the morality issue into a scientific argument, which is fine by me because it puts the argument on my home ground. Forget what religions say. Forget what moral philosophies say. Observations of human behavior are going to be used to provide evidence for the existence of cosmic justice. And, since justice is obviously unavailable in this life, it follows that there must be an afterlife to provide it.

It seems to me that D'Souza has the argument turned around. If people believed in cosmic justice in an afterlife you would think they wouldn't have any need to worry about justice in this life. On the other hand, people who don't believe in cosmic justice in the afterlife would have a strong reason to see that justice is done in this life. Thus belief in the afterlife has a negative impact on society. This hypothesis makes much more sense of observations than does D'Souza's hypothesis. No people are more fervent believers in life after death than Muslims, and in no societies will you find less justice, especially for women, than in Muslim societies. In Christian societies, the more fundamentalist the family the greater the incidence of spousal and child abuse.⁴⁶

Evolution and Self Interest

What are the observations that D'Souza takes as evidence for cosmic justice? He admits that morality is almost universally violated. However, universal criteria and standards that everyone refers to nevertheless exist. Why should these criteria exist at all? D'Souza claims that they defy the laws of evolution, so they

can't be natural. He asserts, "Evolution implies that we are selfish creatures who seek to survive and reproduce in the world" (172). This is contrary to moral behavior. Moral behavior frequently operates against self-interest. It should be noted that evolution does not teach that we are selfish creatures, it observes only that we have evolved instincts to survive and reproduce. And even these instincts can be overcome by our wills. (I accept the existence for free will, but that's another story).

D'Souza reminds us that the group selection argument has long been recognized as a way to reconcile evolution with moral behavior. Patriots frequently sacrifice their lives for their friends and countries. But he claims the argument has a fatal flaw. He asks, how would a tribe of individuals become self-sacrificing in the first place? Cheaters would be more likely to survive than their more altruistic fellow tribesmen.

But, again, D'Souza has the argument turned around. The very use of the word "cheaters" evokes the moral approbation we feel for those who try the "free rider" strategy. In fact, evolution has produced this contempt for cheaters and a cheater who is thrown out of a primitive society would effectively be receiving a death sentence. There would thus be strong selective pressure to evolve a reasonable aversion to cheating, and the scientific evidence confirms this.⁴⁷

D'Souza brings up the proposal of biologists William Hamilton and Robert Trivers that was popularized and developed further by Richard Dawkins in *The Selfish Gene*.⁴⁸ The idea is that the basic unit of evolution is not the individual but the gene, which is the partial sequence of a DNA molecule that carries the individual's genetic information to the next generation and allows its expression in the current generation. This is what really "wants" to survive, if I may be allowed to use that metaphor. The selfish gene according to D'Souza, explains why most parents would readily trade their own lives for their children's. This is not morality. This is not spirituality. This is pure, reductionist, materialist, natural selection.

D'Souza agrees this works for families, but asks why humans behave altruistically toward others outside their families. This seems to accept a false

inference that genes are only shared within families. A gene model of morality doesn't predict that you will only act altruistically toward your family; it says you will tend to act altruistically toward those who most resemble you. It predicts racism as well as charity; a much more accurate prediction than D'Souza's.

Trivers observes that humans, and other animals, behave generously toward others when they expect something in return. Natural selection provides survival instincts to those who engage in mutually beneficial exchanges.⁴⁹

But D'Souza argues this still does not explain “the good things we do that offer no return” (176). He gives as examples, people giving up their seats on a bus to the elderly, donating to charities, or agitating for animal rights or against religious persecution in Tibet. D'Souza does not understand that *Homo sapiens* have always been social animals, and like many other social animals, humans have evolved various behavior patterns that smooth social living. Moreover, many behaviors are byproducts of more basic dispositions and emotions that are themselves adaptively advantageous, e.g. compassion in and of itself is adaptively useful to social individuals and their gene pools, even after subtracting the costs of unrewarded exercises of it. That's why the emotion exists in the first place.

He recognizes that there can be an ulterior, selfish motive to be recognized as a moral person. However, D'Souza says, we still must confront the Machiavellian argument that “the man who wants to act virtuously in every way necessarily comes to grief among the many that are not virtuous” (177). D'Souza claims that true morality, true virtue, rises above all this, acting without regard to self-interest. Maybe, but humans have clearly evolved exactly such a moral capacity. So there's nothing left to explain here.

Evolution, according to D'Souza, cannot explain how humans became moral primates. He tells us, “Humans recognize that there is no ultimate goodness and justice in this world, but they continue to hold up these ideals.” Why? Because they expect to be rewarded in the afterlife. Thus, according to D'Souza, the existence of the afterlife is “proved” by the observation of altruistic behavior in

humans despite the nonexistence of earthly reward. Note that D'Souza's hypothesis implies that the motivation for altruistic behavior is self-interest after all! Is it not the *extremity* of self-interest to want to live forever in the first place, and to expect a special reward for your righteousness when you get there? But in fact, humans have evolved a moral capacity that can be used in a variety of ways, both socially acceptable and socially unacceptable.

D'Souza's hypothesis predicts that only those who believe in an afterlife will exhibit altruistic behavior. That hypothesis can be easily tested. We just need to gather a sample of those who don't believe in an afterlife and see whether they are significantly less virtuous than those who believe.

Skeptic Magazine publisher and *Scientific American* columnist Michael Shermer addressed this question in his important book, *The Science of Good and Evil*. He reports, "Not only is there no evidence that a lack of religiosity leads to less moral behavior, a number of studies actually support the opposite view."⁵⁰

The Post-Evolutionary Phase

I would like to carry D'Souza's chain of reasoning further to draw additional logical conclusions. Humanity has evolved a moral capacity that cannot be attributed to belief in an afterlife where their virtue will be rewarded. Moreover, humanity has entered into a post-evolutionary phase in its development that is far from complete. The human body and brain have undergone only minor evolutionary changes in the last 10,000 years. In recent times we have not been subject to the kind of survival pressures that lead to speciation all throughout evolutionary history.

D'Souza mentions Richard Dawkins' proposal presented in the last few pages of *The Selfish Gene*: Dawkins says, "We have the power to turn against our creators. . . . Let us understand what our own selfish genes are up to because we may then at least have the chance to upset their designs."⁵¹

D'Souza mocks this notion, calling it "absurd." He asks how the "robot vehicles of our selfish genes," namely us, can rebel against our masters. "Can a mechanical car turn against the man with the remote control? Can software

revolt against its programmer?" (181). Any computer programmer will answer with a resounding "YES." It should be stressed that in this extract it is very clear that Dawkins is using the word selfish in a metaphorical manner, as he has frequently explained. Nobody ascribes moral attributes to genes. Moreover, D'Souza is factually wrong; currently molecular biology and bioinformatics are routinely used to alter genes of animals and even of humans in a novel form of treatment called gene therapy. Otherwise-fatal diseases may be cured by this treatment and it is only in its infancy.

In any case, computers might someday become equivalent to intelligent life. As we have seen, no special "spark of life" is needed to inject life into a complex material system. It just has to grow sufficiently complex. I know this is not widely understood, but I think we now know enough about what characterizes a living thing, indeed, an intelligent living thing, that we have no reason to believe that a machine cannot be intelligent. And, as history shows, modern humans have always exhibited their ability to overthrow tyrants. So, why can't a machine?

Once again, D'Souza fails to make his case. In fact, he even succeeds in falsifying his own hypothesis. At least a billion humans in the world today behave well without the expectation of justice in an afterlife. And other billions behave badly in spite of claiming to expect an ultimate balancing of the scales.

Good for Society?

At this point D'Souza claims that the case for an afterlife is supported by the "preponderance of the evidence." I have to disagree. In every case he brings up I have found that more plausible explanations exist, purely reductionist materialistic explanations that do not require the introduction of another, transcendent realm of reality. He continually claims that "studies show" such and such a fact. But he gives no references. I will be happy to consider those studies, if they exist. Instead, my own research has uncovered actual studies, fully documented in books and journals that lead to opposite conclusions.

Human Rights

D'Souza would have us believe that Christian belief in transcendence and the afterlife resulted in the development of our ideas of human dignity and human rights. He wants us to take his word for this in face of the history of Christendom that forms one unbroken line of trampling on the dignity and rights of humans. He gives slavery as an example, insisting, "opposition to slavery developed entirely as a Christian idea" (195).

Now, it is true that the majority of the leaders of the abolition movements in Europe and the United States were Christians. But then, so were most white citizens in these countries. No doubt the abolitionists were upstanding people who adopted a highly moral stance. But where did they get the idea that slavery was immoral? They did not get it from the Bible. Both the Old and New Testament support slavery. Jesus and Paul both affirmed the practice. During and before the U.S. Civil War, southern preachers quoted the Bible as their authority for maintaining slavery.

Abolitionists looked to their own consciences and reason, not any holy books, for authority. The source of their morality was the same as the source of morality for all of us today—theist and atheist alike. We get it from our own humanity. Not a single moral teaching of the New Testament is original there. They all can be found in far more ancient texts from many cultures, East and West (we'll get to that in a moment).

So, once again D'Souza has not proved his case. He has not demonstrated that "concepts of transcendence and eternity, far from being hostile to life and civilization as the atheists allege, have in fact shaped some of our greatest and most beneficial social and political ideals . . . shared by religious and secular people alike" (199).

Does Immortality Work?

I am actually in agreement with D'Souza and in disagreement with many physicists when he says, "science has no capacity to apprehend reality in itself; at

best it can discover truths about the world of experience” (204). Neither does any other human activity. I also agree with D'Souza's statement, “the prestige of science is not based on its claim to truth but on the simple fact that it works so well” (204). Now, it is important to remember that science is not arbitrary, not just one more “cultural narrative” as the now largely defunct post-modernists of a decade ago tried to argue. No cultural narrative, including every religion the world has seen, has come close to working as well as science.

Science is tested against observations that clearly are not just in our heads but are generated by some external reality out there. And, since it is so much more useful than anything else humans have been able to come up with so far, then it seems reasonable to conclude that it penetrates more deeply into reality than any other endeavor, a conclusion that D'Souza denies (203).

D'Souza claims that belief in immortality has practical benefits, just as science does, and these benefits add to his “evidence” that life after death exists. One practical benefit that Christian belief brings within it is a “dedication to Christian morals” (206). He quotes from the works of the German philosopher Friedrich Nietzsche (d. 1900):

They have got rid of the Christian God, and now feel obliged to cling all the more firmly to Christian morality. . . . when one gives up Christian belief one thereby deprives oneself of the right to Christian morality.⁵²

D'Souza interprets Nietzsche as arguing that if we give up God and life after death, we must also give up “the ideas of equality, human dignity, democracy, human rights, even peace and compassion” (208).

D'Souza joins many other Christian apologists in claiming that just about every laudable human action is based on Christianity. In fact all these noble ideas can be found in history long before Christ—in India, Greece, China and elsewhere. While the New Testament contains great moral teachings such as the Golden Rule, none was original to Jesus and his followers. Michael Shermer lists Golden Rules from Confucius (500 BCE), Isocrates (375 BCE), Diogenes Laertius (150 BCE), The Mahabharata (150 BCE), along with two Old Testament

references, all before Jesus.⁵³ So, even if you are not a Christian, feel perfectly free to practice the Golden Rule.

Besides laudably preaching some of the great moral truths of humanity, the New Testament presents a few ideas that are surely less than laudable:

- You must follow Jesus and only Jesus to be saved
- You cannot practice birth control; only abstinence is permissible
- You must not have an abortion
- You must not practice homosexuality
- Women must be subservient to men
- You must treat your slaves with kindness

According to D'Souza, you will receive the benefits of these "moral" gifts if you believe in Jesus and the afterlife.

D'Souza brings up the famous argument called *Pascal's's wager* made by the French philosopher, physicist, and mathematician Blaise Pascal (d. 1662). A medieval Muslim thinker Abu Hamid al-Ghazali may have proposed the wager earlier. Basically the argument is that you have everything to gain and nothing to lose by betting on the afterlife. On the other hand, you have nothing to gain and everything to lose in rejecting it.

Many people, including the great philosopher Bertrand Russell, have seen the flaw in this argument. Assuming God is a just God, wouldn't he look with more favor on someone who honestly didn't believe for lack of evidence than someone who, without evidence, says he believes so he can get his ass into heaven?⁵⁴

Following an approach used by philosopher William James, D'Souza draws up a balance sheet of the asset and liabilities for belief in the afterlife. Let me list these systematically:

Assets of belief in an afterlife

- A1) It provides us with hope at the point of death and a way to cope with our deaths.
- A2) It infuses life with a sense of meaning and purpose.

- A3) It gives us a reason to be moral and a way to transmit morality to our children.
- A4) Clinical evidence exists that religious people who affirm the afterlife are healthier than nonbelievers.

Liabilities of belief in an afterlife

- L1) You may not take action to seek justice in this life if you assume it will be provided in the next.⁵⁵
- L2) You may live in constant fear that any sin you might have committed will condemn you to an eternity of suffering in Hell.
- L3) You may not exercise your own best judgment in matters and allow yourself to be controlled by others who claim sacred authority.
- L4) You will not live your life to the fullest if you think that it is not all the life you have.

I am sure the reader can think of arguments to add to both sides. But I don't see what they have to do with the *reality* of life after death. Indeed, I don't see what they have to do with *belief* in life after death. You could agree completely with D'Souza's four points and more and still not believe.

Nevertheless, I would like to challenge each of D'Souza's points:

- A1) The idea that you will live forever gives you a false sense of a glorious self that leads to extreme self-centeredness in this life. Knowing you are not going to live forever restores a sense of your true place in the scheme of things.
- A2) On the contrary, as in L4, you find more meaning and purpose in this world since it is the only world you have.
- A3) As we have seen, morality comes from humanity and has nothing to do with belief or nonbelief in an afterlife in a different world.
- A4) A systematic review of 69 studies of an initially healthy population showed ($p < 0.001$) that religiosity/spirituality was associated with lower mortality. However, the association was negative for cardiovascular mortality. Furthermore, 22 studies of a diseased population showed no effect ($p = 0.19$). People who attend church regularly are healthier than

those who don't. But then, a lot of people are too sick to go to church.⁵⁶ Moreover, none of these studies compared religious believers with *philosophical* atheists. If the merely apathetic unbelievers are separated from those actively pursuing a self-examined life, the difference from religious believers might vanish completely.⁵⁷ The same authors found that merely having a positive mood and a sense of humor had the same or greater benefit as spirituality on mortality and health for all populations.⁵⁸

A Few Other Arguments

Finally, let me just briefly mention a few of D'Souza's additional arguments.

Modern physics

D'Souza claims that modern physics shows that matter exists that is "radically different from any matter we are familiar with" (220). Referring to the dark matter and dark energy that we now know constitute 96 percent of the matter in the universe, he totally misrepresents the science involved. He tells us that the discovery that the universe contained more matter than was visible with our telescopes, and that the cosmic expansion was accelerating, required "a reassessment of the entire scientific understanding of matter and energy" (171).

This is simply not true. The dark matter and dark energy have all the properties that we have identified with matter since the time of Newton: mass, energy, momentum, electric charge, and so on. They were each detected by their gravitational effects. The dark energy is simply called "energy" to distinguish it from dark matter. Energy and mass are still equivalent by $E = mc^2$. The dark energy has repulsive gravity, which was a big surprise but nevertheless can be found in the equations of general relativity.

Furthermore, for three decades we have had a fully reductionist model of elementary particles called the *standard model* that has agreed with every observation made in all of science without a single confirmed anomaly over that time. It provides us with a full knowledge of the physics of the universe back to when it was only a trillionth of a second old.

D'Souza also tells us that “Physics also demonstrates the possibility of realms beyond the universe and modes of being unconstrained by the limits of our physical laws” (220). Here I assume he refers to other universes beside our own. Yes, they are possible, and, indeed, predicted to exist by modern cosmology. But nowhere do physicists and cosmologists say that these other universes are not made of matter and not described by natural laws.

Modern biology

D'Souza claims that modern biology shows that the “evolutionary transition from matter to mind does not seem random or accidental but built into the script of nature” (220). He wishfully interprets this as a transition from material to immaterial. First, this view is far from the mainstream of modern biology and held by a small minority of biologists who allow their religious faith to intrude on their science. Second, even if they are right about some previously unrecognized teleological principle in action, there is no basis for assuming it is not purely material.

Modern Philosophy

Modern philosophy distinguishes between experience and reality. While many physicists would disagree, I concur that this distinction is valid. The quantities and models of physics are human inventions that are used to describe observations. Those observations no doubt result from an underlying objective reality, and since the models must agree with observations they must have something to do with that reality. However, the models do not necessarily have to exist on one-to-one correspondence with reality. In fact, we have no way of knowing from observations alone the true nature of reality.

D'Souza refers to the idea of Kant and Schopenhauer that two worlds exist, the phenomenal world of our observations and the noumenal world that is behind a veil and unavailable to us directly. Since the two worlds are connected, we humans are part of both and so when we die we turn to dust in the phenomenal world but live on in the noumenal.

This is possible, I suppose, but I do not see why the two worlds can't be one.

Referring to the allegory of Plato's Cave, we are like prisoners tied up in the cave where we can only see the wall and the shadows cast on it by figures around the fire. They are real and the shadows are images. But note that they are both in the same world.

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Notes

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²Dinesh D'Souza, *Life After Death: The Evidence* (Washington, DC: Regnery, 2009).

³ See scholarship and examples cited in Paul Tobin, "The Bible and Modern Scholarship," in *The Christian Delusion*, ed. John W. Loftus (Amherst NY: Prometheus Books, 2010), pp. 148-80.

⁴Francis Crick, *The Astonishing Hypothesis : The Scientific Search for the Soul* (New York New York: Scribner Maxwell Macmillan International, 1994), p. 258.

⁵Victor J. Stenger, *Physics and Psychics: The Search for a World Beyond the Senses* (Amherst, NY: Prometheus Books, 1995), pp. 150-159.

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- ⁶Alan F. Segal, *Life After Death : A History of the Afterlife in the Religions of the West* (New York: Doubleday, 2004).
- ⁷ Most experts agree the pagan Zoroastrians introduced this idea to the Jews. See: Segal, *Life after Death*, pp. 173-203; and discussion and sources in Richard Carrier, *Not the Impossible Faith: Why Christianity Didn't Need a Miracle to Succeed* (Lulu 2009), pp. 85-86, 90-99.
- ⁸See my discussion of ancient Eastern thinking in Victor J. Stenger, *The New Atheism: Taking a Stand for Science and Reason* (Amherst, NY: Prometheus Books, 2009), pp. 201-210.
- ⁹ See: J.M. Bering, "The Folk Psychology of Souls," *Behavioral and Brain Sciences* 29 (2006): 453-98; Paul Bloom, *Descartes' Baby: How the Science of Child Development Explains what Makes Us Human* (New York: Basic Books, 2004), pp. 189-229.
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- ²⁵Ibid, p. 27.
- ²⁶Ibid, p. 186.
- ²⁷Ibid.
- ²⁸Ibid, p. 209.
- ²⁹Ibid, p. 210.
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³⁹*Ibid*, p.

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⁴⁴Dannion Brinkley, and Paul Perry, *Saved By the Light: The True Story of a Man Who Died Twice and the Profound Revelations He Received* (New York: Villard

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- ⁴⁶Ruth Miller, Larry S. Miller, and Mary R. Langenbrunner, "Religiosity and Child Sexual Abuse: A Risk Factor Assessment," *Journal of Child Sexual Abuse* 6, issue 4 (1997): 14-34; Michael Franklin and Marian Hetherly, "How Fundamentalism Affects Society," *The Humanist* 57 (September/October 1997): 25. And there may be other evidence supporting this conclusion: see Richard Carrier's chapter on morality in the present volume.
- ⁴⁷ Many other pressures will have had the same effect (e.g. sexual selection; differential advantages of cooperating over noncooperating groups; etc.). See recent surveys of the evidence in Walter Sinnott-Armstrong, ed., *Moral Psychology, Volume 1: The Evolution of Morality: Adaptations and Innateness* (MIT Press, 2008).
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- ⁵²Friedrich Nietzsche, *Twilight of the Idols* (New York: Penguin, 1990), pp. 80-81.
- ⁵³Shermer, *The Science of Good and Evil*, p. 25-26. For a thorough survey of the

history and cross-cultural evidence for this see Jeffrey Wattles, *The Golden Rule* (New York : Oxford University Press, 1996); see also: David Eller, "Christianity Does Not Provide the Basis for Morality," *The Christian Delusion: Why Faith Fails*, ed. John Loftus (Amherst, New York: Prometheus Books, 2010), pp. 347-67.

⁵⁴ See Dr. Richard Carrier, "The End of Pascal's Wager: Only Nontheists Go to Heaven" (The Secular Web, 2002), at http://www.infidels.org/library/modern/richard_carrier/heaven.html.

⁵⁵ This is especially noticeable in India, where the most wretched people blame themselves, that is, their previous lives, for their wretchedness rather than rising up against their oppressors.

⁵⁶ Yoichi Chida, Andrew Steptoe, and Lynda H. Powell, "Religiosity/Spirituality and Mortality," *Psychotherapy and Psychosomatics* 78, No. 2 (2009): 81-90.

⁵⁷ For this very reason Chida, Steptoe, and Powell warn, "the presence of publication biases indicates that results should be interpreted with caution," *ibid.* p. 81. Note that the reliability of the methods and some of the results of the Chida study group have been seriously challenged (illustrating many of the problems inherent in meta-analyses generally): James C. Coyne and Howard Tennen, "Positive Psychology in Cancer Care: Bad Science, Exaggerated Claims, and Unproven Medicine," *Annals of Behavioral Medicine* 39, No. 1 (February 2010): 16-26.

⁵⁸ Yoichi Chida and Andrew Steptoe, "Positive Psychological Well-Being and Mortality: A Quantitative Review of Prospective Observational Studies,"

Psychosomatic Medicine 70, No. 7 (2008): 741-56 (though see previous note).