Daniel C. Dennett
An Evolutionary Account of Religion

Daniel Dennett (b. 1942) pushes his readers to investigate their religion in the same way they would investigate anything else. For him, the best way to investigate it is by invoking an evolutionary explanation in terms of memes, cultural units that are replicated and transmitted often unconsciously. He wonders why religion, since it is so costly, has survived. Religion probably arose when people developed the hyperactive intentional stance, enhanced by language, which attributes agency to a wide variety of things, animate or inanimate, that are puzzling or frightening to us. The rituals and beliefs, as memes, were passed on from parents to children in ways that protected even the weakest memes (those that did not work). As folk religion transmuted into organized religion, religious authorities, with self-interest playing a role, became stewards of the memes and protected them. In the end, Dennett returns to his concern that if religion has survived, it must be beneficial in some way. He thinks that religion might be good for one's health and morale, although not necessarily better than disbelief. But he is skeptical of the claim that religion makes one morally better. Throughout, Dennett is not concerned with the truth of religious beliefs but rather with their function in culture.

WHY GOOD THINGS HAPPEN

Religion can certainly bring out the best in a person, but it is not the only phenomenon with that property. Having a child often has a wonderfully maturing effect, but it is not the only phenomenon with that property. Why did religion survive, since it is so costly, whereas other phenomena that are costly do not? Religion must be beneficial in some way.

Lawyers have a stock Latin phrase, Cui bono? which means “Who benefits from this?” a question that is even more central in evolutionary biology than in the law. Any phenomenon in the living world that apparently exceeds the functional cries out for explanation. The suspicion is always that we must be missing something, since a gratuitous outlay is, in a word, uneconomical, and as economists are forever reminding us, there is no such thing as a free lunch.... Evolution is remarkably efficient at sweeping pointless accidents off the scene, so if we find a persistent pattern of expensive equipment or activity, we can be quite sure that something benefits from it in the only stocktaking that evolution honors: differential reproduction. We should cast our nets widely when hunting for the beneficiaries, since they are often elusive....

Whatever else religion is as a human phenomenon, it is a hugely costly endeavor, and evolutionary biology shows that nothing so costly just happens. Any such regular expenditure of time and energy has to be balanced by something of “value” obtained, and the ultimate measure of evolutionary “value” is fitness: the capacity to replicate more successfully than the competition does. (This does not mean that we ought to value replication above all! It means only that nothing can evolve and persist for long in this demanding world unless it somehow provokes its own replication better than the replication of its rivals.) Since money is such a recent innovation from the perspective of evolutionary history, it is weirdly anachronistic to ask what pays for one evolved biological feature or another, as if there were actual transactions and ledgers in Darwin’s countinghouse. But this metaphor nevertheless nicely captures the underlying balance of forces observed everywhere in nature, and we know of no exceptions to the rule. So,... I ask, what pays for religion? Abhor the language if you must, but that gives you no good reason to ignore the question. Any claim to the effect that religion—your religion or all religion—stands above the biosphere and does not have to answer to this demand is simply bluster. It might be that God implants each human being with an immortal soul that thirsts for opportunities to worship God. That would indeed explain the bargain struck, the exchange of human time and energy for religion. The only honest way to defend that proposition, or anything like it, is to give fair consideration to alternative theories of the persistence and popularity of religion and rule them out by showing that they are unable to account for the phenomena observed. Besides, you might want to defend the hypothesis that God set up the universe so that we would evolve to have a love of God. If so, we would want to understand how that evolution occurred....

Can’t we just accept the obvious fact that religion is a human phenomenon and that humans are mammals, and hence products of evolution, and then leave the biological underpinnings of religion at that? People make religions, but they also make automobiles and literature and sports, and surely we don’t need to look deep into biological prehistory to understand the differences between a sedan, a poem, and a tennis
treatment. Aren’t most of the religious phenomena that need investigation cultural and social—hence somehow “above” the biological level?

This is a familiar presumption among researchers in the social sciences and humanities, who often deem it “reductionistic” (and very bad form) even to pose questions about the biological bases of these social movements. Drawn to the disciplinary isolation it motivates has become a major obstacle to good scientific practice, a poor excuse for ignorance, an ideological crutch that should be thrown away.

We have particularly compelling reasons for investigating the biological bases of religion now. Sometimes—rarely—religions go bad, veering into something like group insanity. And even normal religious movements that anticipate from the animate to the inanimate, from the rustling of the leaves, the wind itself, to the moon—the suffering of which causes? Which features, if any, have evolved more discriminating methods; in particular, they tend to have the ability to divide detected motions into the categories predator, or a prey, or a mate, or a rival conspecific. Any vibration or bump is apt to set it off, and probably most of these are harmless, but better safe than sorry is the clam’s motto (the free-floating rationale of the clam’s alarm system). Mobile animals have evolved more discriminating methods; in particular, they tend to have the ability to divide detected motion into the banal (the rustling of the leaves, the swaying of the seaweed) and the potentially vital: the ”animate motion” (or “biological motion”) of another agent. Another animal, with a mind, who might be a predator, or a prey, or a mate, or a rival conspecific. This makes economic sense, of course. If you startle at every motion you detect, you’ll never find supper, this is another Good Trick of creating a false positive orienting response. Your dog leaps up and growls when some snow falls on the eaves with a thud that rouses him from his nap, he is manifesting a “false positive” orienting response triggered by his Hunter instinct. Sometimes this Good Trick can be too much of a good thing; then we have what Justin Barrett calls a hyperactive agent detection device, or HADD. This overshooting is not restricted to human beings. When your dog leaps up and growls when some snow falls off the eaves with a thud that rouses him from his nap, he is manifesting a “false positive” orienting response triggered by his Hunter instinct.

Recent research on animal intelligence has shown that some mammals and birds, and perhaps some other creatures as well, carry these agent-discriminations into more sophisticated territory. Evidence shows that they not only distinguish the animate movers from the rest but draw distinctions between the likely sorts of animate ones. They will attack me or flee, will it move left or right, will it back down if I threaten, does it see me yet, does it want to eat me or would it prefer to go after my neighbor. These cleverer animal minds have discovered the further Good Trick of adopting the intentional stance: they treat some other things in the world as agents....

Whenever an animal treats something as an agent, with beliefs and desires (with knowledge and goals), I say that it is adopting the intentional stance or treating that thing as an intentional system. The intentional stance is a useful perspective for an animal to take in a hostile world, since there are things out there that may want you, and may have beliefs about where it is heading...

There is no doubt at all that normal human beings do not have to be taught how to conceive of the world as containing lots of agents who, like themselves, have beliefs and desires, as well as beliefs and desires about the beliefs and desires of others.... This virtuoso use of the intentional stance comes naturally, and it has the effect of saturating the human environment with folk psychology... . So powerful is our innate urge to adopt the intentional stance that we have real difficulty turning it off when it is no longer appropriate...

Extrapolating back to human prehistory with the aid of biological thinking, we can surmise how folk religions emerged without conscious and deliberate design, just as languages emerged, by interdependent evolutionary innovations. At the root of human belief in gods lies an instinct on a hair trigger: the disposition to attribute agency—beliefs...
RELIGION, THE EARLY DAYS

Simple forms of what we might call practical animism are arguably not mistakes at all, but extremely useful ways of keeping track of the tendencies of designed things, living or artificial.... But sometimes the tactic of seeking an intentional-stance perspective comes up dry. Much as our ancestors would have loved to predict the weather by figuring out what it wanted and what beliefs it harbored about them, it simply didn't work. It no doubt seemed to work, however. Every now and then the rain dances were rewarded by rain....

Put these two ideas together—a hyperactive agent-seeking bias and a weakness for certain sorts of memorable combos—and you get a kind of fiction-generating contraption. Every time something puzzling happens, it triggers a sort of curiosity startle, a "Who's there?" response that starts churning out "hypothese[s] of sorts: "Maybe its Sam, maybe it's a wolf, maybe its a ... a tree that can walk—hey, maybe it's a tree that can walk!" We can suppose that this process almost never generates anything with any staying power—millions or billions of little stretches of fantasy that almost instantly evaporate beyond recall until, one day, one happens to occur at just the right moment, with just the right sort of zing, to get rehearsed, not just twice, but many times. A line of ideas—the walking-tree lineage—is born. Every time the initiator's mind is led to review the curious idea, not deliberately but just idly, the idea gets a little stronger—in the sense of a little more likely to occur in the initiator's mind again. And again. It has a little self-replicative power, a little more self-replicative power than the other fantasies it competes with for time in the brain. It is not yet a meme, an item that escapes an individual mind and spreads through human culture, but it is a good proto-meme....

To sum up the story so far: The memorable lymphs and fairies and goblins and demons that crowded the mythologies of every people are the imaginative offshoots of this hyperactive, random finding agency when ever anything puzzles or frightens us. This mindlessly generates a vast overpopulation of agent-ideas, most of which are too stupid to hold our attention for an instant.... It is in the genetic interests of parents ... to inform—note the form of the word—a young infant (and relatively safe) to trust one's parents.... Once the information superhighway between parent and child is established by genetic evolution, it is ready to be used—or abused—by any agents with agendas of their own, or by any memes that happen to have features that benefit from the biases built into the highway....

"Natural selection builds child brains with a tendency to believe whatever their parents and tribal elders tell them" (Dawkins). It is not surprising, then, to find religious leaders in every part of the world hitting upon the extra authority provided them by their taking on the title "Father." ...

People have been taught since childhood, and hence will avow, that God knows everything. ... But what good to us is the gods' knowledge if we can't get it from them? How could one communicate with the gods? Our ... ancestors stumbled on an extremely ingenious solution: divination. We all know how hard it is to make the major decisions of life: Should I hang tough or admit my transgression? Should I move or stay in my present position? ... We still haven't figured out any satisfactory systematic way of deciding these things. Anything that can relieve the burden of figuring out how to make these hard calls is bound to be an attractive idea. Consider flipping a coin, for instance. Why do we do it? To take away the burden of decision, to find a reason for choosing B. We like to have reasons for what we do, but sometimes nothing sufficiently persuasive comes to mind, and we recognize that we have to decide soon, so we concoct a little gadget, an external thing that will make the decision for us. But if the decision is about something momentous, like whether to go to war, or make the decision for us. But if the decision is about something momentous, like whether to go to war, or marry, or confess, anything like flipping a coin would just be too, well, flippant. In such a case, choosing for no good reason would be too obviously a sign of incompetence.... Something more ceremonial, more impressive, is needed, and all have not only tells you what to do, but gives you a reason (if you squint just right and use your imagination)....

Even if people are not, in general, capable of making good decisions on the information they have, it may seem to them that divination helps them think about their strategic predicaments, and this may provide the motivation to cling to the practice. For reasons they cannot fathom, divination provides relief and makes them feel good—rather like tobacco. And note that none of this is genetic transmission. We're talking about a culturally transmitted practice of divination, not an instinct. We don't have to settle the empirical question now of whether divination memes are mutualist memes that actually enhance the fitness of their hosts or parasite memes that they'd be better off without. Eventually it would be good to get an evidence-based answer to this question, but for the time being it is the question I am interested in. Notice, too, that this leaves wide open the possibility that divination (under specific circumstances, to be discovered and confirmed) is a mutualist meme because it's what God who knows what is in everyone's heart and on special occasions tells people what to do. After all, the reason why water is deemed essential to life in every human culture is that it is essential to life. For the moment, my point is just that divination, which appears just about everywhere in human culture, could be understood as a natural phenomenon paying for itself in the biological coin of replication, whether or not it is actually a source of reliable information, strategic or otherwise....

Every folk religion has rituals. To an evolutionist, rituals stand out like peacocks in a sunlit glade. They are usually stunningly expensive: they often involve the deliberate destruction of valuable food and other property—to say nothing of human sacrifices—are often phenomenally injurious to the participants, and typically require impressive preparation time and effort. Who or what is the beneficiary of all this extravagant outlay? We have already seen two ways rituals might pay for themselves, as psychologically necessary features of divination techniques, or hypnotic trances in shamanic healing. Once they were established on the scene for these purposes, they would be available to be adapted for other uses.... But there are other possibilities to explore....

People run and jump and throw stones pretty much the same way everywhere, and this regularity is explained by the physical properties of human limbs and musculature and the uniformity of wind resistance around the globe, not a tradition somehow passed down from generation to generation. On the other hand, where no constraints ensure reinvention, items of culture will be able to wander swiftly, widely, and unrecognizably in the absence of mechanisms of copying fidelity. And wherever this wandering transmission occurs, there will automatically be selection for mechanisms that enhance copying fidelity whenever they arise, whether or not people care, since any such mechanisms will tend to persist longer in the cultural medium than alternative (and no less costly) mechanisms that get themselves copied indifferently.

One of the best ways of ensuring copying fidelity over many replications is the "majority rule" strategy that is the basis for the uncannily reliable behavior of computers. It was the great mathematician John von Neumann who saw a way of applying this trick in the real world of engineering so that Alan Tur-ing's imaginary computing machine could become a reality—getting it right.... We can now use available computers out of unavoidably unreliable parts. Practically perfect transmission of trillions of bits is routinely executed by even the cheapest computers these days, ... but this trick has been invented and reinvented over the centuries in many variations....

Long before it was consciously invented or discovered, this Good Trick (a move in design space that will be "discovered" again and again by blind evolutionary processes simply because so many different adaptive paths lead to it and thereby endorse it) was already embodied as an adaptation of memes. It can be seen at work in any oral tradition, religious or secular, in which large numbers of people act in unison—praying or singing or dancing, for instance. Not everybody will remember the words of the melody or the next step, but most will, and those who are out of step will quickly correct themselves to join the throng, preserving the traditions much more reliably than any of them could do on their own. It doesn't depend on virtuosos memorists scattered among them; nobody needs to be better than average. It is mathematically provable that such "multiplexing" schemes can overcome the "weakest link" phenomenon, and make a mesh that is much stronger than its weakest links. It is no accident that religions have on special occasions on which the adherents come together to act in public unison in rituals. Any religion without such occasions would already be extinct.

A public ritual is a great way of preserving content with high fidelity, but why are people so eager to
participate in rituals in the first place? Since we are presuming that they are not intent on preserving the fidelity of their meme-copying by constituting a sort of social computer-memory, what motivates them to join in? Here, there are currently a welter of conflicting hypotheses that will take some time and research to resolve, an embarrassment of riches in need of culling. Consider what we can call the shamanic-advertising hypothesis. Shamans the world over conduct much of their medicine in public ceremonies, and they are adept at getting the local people not just to watch while they induce a trance in themselves 421 their clients but to participate, with drumming, singing, chanting, and dancing.... Innate curiosity, stimulated by music and rhythmic dancing and other forms of ecstasy, could probably account for the initial motivation to join the chorus....

Doesn't there have to be someone to prime the pump? How would this initially get started unless there were some people, some agents, who wanted to start a ritual tradition As usual, this bunch betrays a failure of evolutionary imagination. It is of course possible—and in some instances surely likely or even proven—but some community leader or other agent set out to design a ritual to serve a particular purpose, but we have seen that such an author is not strictly necessary. Even elaborate and expensive rituals of public rehearsal could emerge out of earlier practices and habits without conscious design....

Note that, so far, the adaptations that we have uncovered as likely contributors to the survival of religions have been neutral on the subject of whether or not we are beneficiaries. They are features of the medium, not the message, designed to ensure the transmission fidelity—a requirement of evolution—while almost entirely neutral with regard to whether what is transmitted is good (a mutualist), bad (a parasite), or neutral (a commensal)....

THE EVOLUTION OF STEWARDSHIP

How long could folk religion be carried along by our ancestors before reflection began to transform it? We may get some perspective on this by looking at other species. It is obvious that birds don't need to understand the principles of aerodynamics that dictate the shapes of their wings. It is less obvious—but still true—that birds can be uncomprehending participants in such elaborate rituals as leks—the mating meeting places sometimes called “nature’s nightclubs”—where females of a local population of a species gather to observe the competitive performances of the males, who can be of many different types for leks, which are also found in some mammals, fish, and even insects, is clear: leks pay for themselves as efficient methods of male selection under specifiable conditions. But the animals that participate in leks don't need to have any understanding of why they do what they do. The males show up and show off, and the females pay attention and let their choices be guided by the “dictates of their heats,” which, un- knownst to them, have been shaped by natural selection over many generations.

Could our proclivity for participating in religious rituals have a similar explanation? The fact that our rituals are passed on through culture, not genes, doesn't rule out this prospect at all. We know that specific lan-
guages are passed on through culture, not genes, but there has also been genetic evolution that has tuned our brains for ever more adept acquisition and use of language. Our brains have evolved to become more effective word processors, and they may also have evolved to become more effective implementers of the culturally transmitted habits of folk religions.... Sensitivity to ritual.... could be part of that package....

Folk religions emerge out of the daily lives of people living in small groups, and they share common features the world over. How and when did these metamorphose into organized religions? There is a general concern among researchers that the big shift responsible was the emergence of agriculture and the larger settlements that this made both possible and necessary....

What I now want to suggest is that, alongside the domestication of animals and plants, there was a gradual process in which the wild (self-sustaining) memes of folk religion became thoroughly domesticated. They acquired stewards. Memes that are fortunate enough to have stewards, people who will work hard and use their intelligence to foster their propagation and protect them from their enemies, are relieved of much of the burden of keeping their own lineages going.... The wild memes of language and folk religion, in other words, are like rats and squirrels, pigeons and cold viruses—magnificently adapted to living with us and exploiting us, whether we like them or not. The domesticated memes, in contrast, depend on help from human guardians to keep going....

So we find the same devices invented over and over again, in just about every religion, and many nonreligious organizations as well.... For instance, accepting inferior status to an invisible god is a cunning stratagem, whether or not its cunning is consciously recognized by those who stoop upon it.... Those who rely on it will thrive, willingly or otherwise. As every subordinate knows, one’s commands are more effective than they might otherwise be if one can accompany them with a threat to tell the bigger boss if disobedience ensues. (Variations on this stratagem are well known to Mafia underlings and used-car salesmen, among others—“I myself am not authorized to make such an offer, so I'll have to check with my boss. Excuse me for a minute.”)....

The gods will get you if you try to cross either one of us. We do have a role of rivals, both individual rehearsals and unison error-absorption sessions, in enhancing the fidelity of memetic transmission, and noted that these are enforced by making nonparticipation costly in one way or another....

The transmission of religion has been attended by voluminous revision, often deliberate and fore-
sighted, as people became stewards of the ideas that had entered them, domesticating them. Secrecy, deception, and systematic invulnerability to discon-
firmation are some of the features that have emerged, and these have been designed by processes that were sensitive to new answers to the “who benefits” ques-
tion, as the stewards' motives entered the process....

BELIEF IN BELIEF

It has been noted by many commentators that typi-
cal, canonical religious beliefs cannot be tested for truth. As I suggested earlier, this is as good as a defin-
ing characteristic of religious creeds. They have to be "taken on faith" and are not subject to (scientific, historical) confirmation. But, more than that, for this reason and others, religious-belief expressions cannot really be taken at face value. The anthropolo-
gists Craig Palmer and Lyle Steadman [argue for] the need to recast anthropological theories as accounts of religious behavior, not religious belief: "While religious beliefs are not identifiable, religious behavior is, and this aspect of human experience can be comprehended. What is needed is an explanation of this observable religious behavior that is restricted to what can be observed."....

TOWARD A BUYER’S GUIDE TO RELIGION

Does religion make us better? William James distin-
guished two main ways in which this might be true. It might make people more effective in their daily lives, healthier, both physically and mentally, more steadfast and composed, more strong-willed against temptation, less tormented by despair, better able to bear their mis-
fortunes without giving up. He calls this the "mind-care movement." Or it might make people morally better. The ways in which religion purports to accomplish this...
he calls "saintliness." Or it could accomplish both ends, in varying degrees under different circumstances....

So is religion good for your health? There is growing evidence that many religions have succeeded remarkably well on this score, improving both the health and morale of their members, quite independently of the good works they may have accomplished to benefit others. For instance, eating disorders such as anorexia nervosa and bulimia are much less common among women in Muslim countries, in which the physical attractiveness of women plays a muted role relative to that in Westernized countries.... [These] questions are [independent] from whether or not any religious beliefs are true.... The results so far are strong but in need of further investigation....

MORALITY AND RELIGION

Religion plays its most important role in supporting morality, many think, by giving people an unbeatable reason to do good: the promise of an infinite reward in heaven, and (depending on tastes) the threat of an infinite punishment in hell if they don't. Without the divine carrot and stick, goes this reasoning, people would loll about aimlessly or indulge their basest desires, break their promises, cheat on their spouses, neglect their duties, and so on. There are two well-known problems with this reasoning: (1) it doesn't seem to be true, which is good news, since (2) it is such a demeaning view of human nature.

I have uncovered no evidence to support the claim that people, religious or not, who don't believe in reward in heaven and/or punishment in hell are more likely to kill, rape, rob, or break their promises than people who do. The prison population in the United States shows Catholics, Protestants, Jews, Muslims, and others—including those with no religious affiliation—represented about as they are in the general population. Brights (nonbelievers) and others with no religious affiliation exhibit the same range of moral excellence and turpitude as born-again Christians, but, more to the point, so do members of religions that deemphasize or actively deny any relationship between moral behavior "on earth" and eventual postmortem reward and punishment. And when it comes to "family values," the available evidence to date supports the hypothesis that brights (nonbelievers) have the lowest divorce rate in the United States, and born-again Christians, the highest....

But what about that hunger for spirituality that so many of my informants think is the mainspring of religious allegiance? The good news is that people really do want to be good. Believers and brights alike deplore the crass materialism of popular culture and yearn not just to enjoy the beauty of genuine love but to bring that joy to others. It may often have been true in the past that for most people the only available road to that fulfillment involved a commitment to the supernatural, and more particularly to a specific institutional version of the supernatural, but today we can see that there is a bounty of alternative highways and footpaths to consider.

The widely prevailing opinion that religion is the bulwark of morality is problematic at best. The idea that heavenly reward is what motivates good people is demeaning and unnecessary; the idea that religion at its best gives meaning to a life is jeopardized by the hypocrisy trap into which we have fallen; the idea that religious authority grounds our moral judgments is useless in genuine ecumenical exploration; and the presumed relation between spirituality and moral goodness is an illusion.

STUDY QUESTIONS

1. How does Dennett connect evolution with religion?
2. How does Dennett see folk religion developing, and how does he assess its success?
3. How does Dennett assess the benefit of religion, and what might be his prognostication for its survival?
4. What in Dennett’s presentation makes him a nonrealist on religion?