nism, and designed its use. This conclusion is invincible. A *second* examination presents us with a new discovery. The watch is found, in the course of its movement, to produce another watch, similar to itself; and not only so, but we perceive in it a system or organisation, separately calculated for that purpose. What effect would this discovery have, or ought it to have, upon our former inference? What, as hath already been said but to increase, beyond measure, our admiration of the skill, which had been employed in the formation of such a machine? Or shall it, instead of this, all at once turn us round to an opposite conclusion, viz. that no art or skill whatever has been concerned in the business, although all other evidences of art and skill remain as they were, and this last and supreme piece of art be now added to the rest? Can this be maintained without absurdity? Yet this is atheism.

NO

Sally Morem

Does God Exist?

Does God exist? Whole libraries of books have addressed this complex question. How can I simplify the discussion to make my answer short enough to fit in this essay, yet coherent enough to satisfy philosophical rigor?

For the sake of brevity, I will be referring mainly to the Judeo-Christian God, although most of this discussion is applicable to other theological constructs. I will not get into the messy business of trying to assert and analyze in-depth definitions of the world *God,* leaving that work to theologians and philosophers. Instead, *God* will refer to the anthropomorphic concept of a supreme being who created the universe and all that is in it, a concept very familiar to most Americans.

I will concentrate on the two aspects of the question which seem to exercise the most power over the imagination of those theologians and philosophers who believe God must exist: the *Argument From Design* and the *Argument From Morality,* with a necessary detour through the *Problem of Evil.* Then, I will pose an alternative to the traditional concepts of theistic creation and command, namely—a self-organizing universe of growing complexity.

The *Argument From Design* runs roughly like this: the universe and everything within it seem to exhibit far too many elements of apparently deliberate and thoughtful design to have come into being without a Designer.

But does it? What is good design? The most appropriate definition for the noun design that I could find is the fifth sub-definition listed in *Webster's Seventh New Collegiate Dictionary—*" . . .an underlying scheme that governs functioning, developing, or unfolding: pattern, motif." We also observe that good design has elements of precision and craftsmanship: the careful selection of materials, the detailed pattern, the exact placement of elements. Does this definition fit our universe?

Good design presumes the existence of a Designer, one who planned, fabricated, and deployed it precisely as desired. But, I ask again, does the universe have good design? Could we ever tell? Perhaps not, but we do manage to see pattern in the cosmos and nature. We see a buildup of many levels of organization

over time—subatomic particles making up atoms, atoms uniting in molecules, molecules bonding into larger, much more elaborate molecules known as amino acids, amino acids clumping together into proteins and nucleic acids, cells, multicellular life of lush variety and every changing form, brains of increasing complexity flashing neural patterns known better as human minds, humans shaping themselves and their ideas, first in the most intimate of societies known as families, then tribes, villages, cities, nations, empires, and superpowers which span continents. Surely such fecundity of nested patterns indicates the presence of a master Patternmaker.

But, we also see examples of what we might call shoddy workmanship: galaxies running into one another, black holes sucking in material from companion stars, misshapen disease-ridden, dying lifeforms. We also see examples of what for a lack of a better term might be called fuzziness or goopiness. Molecules jostle and bump into one another until some of them "stick," forming a larger molecule. Cells are not the orderly protein factories depicted in biology books. Bits of RNA, ribosomes and amino acids wander about the cell endlessly, occasionally running into one another. Then, and only then, do they build proteins for the body. When we study them up close, the processes producing nested patterns which earlier looked so marvelously precise take on a much more random character.

Scientists suspect that whatever order we do observe around us actually grows out of a kind of spontaneous ordering, a universe lifting itself up by its own bootstraps, if you will, Instead of the Creator God ordering everything just so—*Let There Be Light*—space itself actually expanded out of a microscopic quantum vacuum, carrying matter and energy with it. One wag called this version of the Big Bang theory "the ultimate free lunch." The universe in this scenario continued to grow into the vastness we know today. And still it grows and freely orders itself. Each level of organization builds upon whatever ordering pattern was already in existence in a thoroughly naturalistic way.

Ponder these questions. They bear directly on the question of God's reputed existence: Is the world a made thing or did it just happen? Is our perception of Design in the world accurate or is it merely a reflection of our deepest hopes and fears? Could we ever perceive the true nature of reality or must we be content with approximations? Does the Designer live outside or within ourselves?

Now for the *Argument From Morality.* What is morality and how do we humans build it into vast, intricate systems of belief and governance of behavior? The same Webster's dictionary defines morality as "... a doctrine or system of morals" and "conformity to ideals of right human conduct." To theists, morality is God's shadow on the human soul. C. S. Lewis has written of this belief plainly and simply, yet most eloquently. "... I find that I do not exist on my own, that I am under a law, that somebody or something wants me to behave in a certain way."

Lewis believed that the somebody or something existed Before and Outside our reality and implanted messages within us. Such beliefs invite further questions. For instance, if you believe God exists and that He has something to do with the existence of morality, does God establish morality or enforce it? This question is a little trickier than it looks.

If God establishes morality, then morality is anything He wants it to be. You, a loyal Believer, could and should rob, rape and murder, *if* these are God's moral commands. A universe in which morality is ordained by God is a universe with a fundamentally arbitrary moral code. Lewis's messages would merely be a further reminder of God's own desires. They would have little to do with us.

But, if you believe that God merely enforces an inherent moral order, then that morality would exist pretty much as is whether commanded or not. At that point, your concept of God changes. God ceases to be the omnipotent Being you were postulating earlier. Lewis's messages in this situation would either be a plaintive cry for help from a deficient deity or merely an echo of a remembrance of moral laws laid down by ancient ancestors.

As far as moral systems are concerned, we must now face the fact that infinite goodness, knowledge, and power are mutually exclusive characteristics for a creative and sustentacular God. It is simply not possible for a supremely good and powerful deity to create a universe He must know will have evil in it. Here it is, then, the *Problem of Evil:* If God is so good, why does he permit evil to exist in His creation?

We grant that any being with great power can cause much that is good and much that is evil to take place. We humans observe much that is good and much that is evil in us and around us. In this question of God's existence (as in any other questions), our observations work as evidence for and against our conjectures. In light of these statements, let's consider the main possibilities as structured by the history of Western religious thought: 1. There is good and evil, therefore a God (or gods) who wished to create good and evil did so. 2. There is good and evil, therefore a God who wished to create only good failed to achieve His goals. 3. There is good and evil, but humans alone make the call, therefore God becomes redundant.

The first defines many religions. Ancient people believed in their gods, but didn't believe they were particularly good or kind. They feared their gods, certain that they were as willful and capricious as any human, but with far more power at their disposal. We acknowledge the history of these beliefs and call them mythologies, but they hold no power over the modern human imagination, save that of a few pagans and Druids. The thought of Zeus, Athena, Aphrodite or Thor commanding the elements and directing human lives has been rendered laughable by the sheer weight of the last 2,000 years of human cultural experience. We can dismiss this possibility out of hand.

The second defines the great monotheistic religions. Somehow, an All-Knowing, Omnipotent God, who wished to create a world with beings in it who would worship and obey Him, actually wound up creating stubborn, disobedient, immoral human beings. How could such a thing happen? There are various explanations given in various sacred books—a heavenly battle, a fallen angel, free will, the Garden of Eden, a serpent, an apple, and the wiles of woman

(Eve). But these are all merely parts of a mad existential scramble to attempt to bridge a paradox of astounding proportions—the Perfect Creator versus a Creation that should be recalled to the factory.

If we know nothing whatsoever of how we humans perceive the world and ourselves, if we know nothing whatsoever of physical and biological science, we would still have to opt for the third possibility simply because it involves no horrendously tangled logic or unbridgeable contradictions.

There is good and evil. These are judgments made only by humans with respect to many aspects of reality. Morality grew out of countless decisions made and stories told through hundreds of generations of human struggle and joy. That which we like we call *good;* that which we hate we call *evil.* It's as simple as that. If the question of God's existence rests on the acknowledged existence of good and evil, even though we humans are the ones who develop and employ moral systems, God need not exist. We humans can do it all by ourselves, thank you very much.

Let's consider another possibility. Let's consider *self-organizing* systems of growing complexity. This alternative to the created, commanded, scripted universe of religion is a multi-level, self-ordering, evolutionary process in which humans can and do play a major role. In such a universe the *Problem of Evil* disappears. Evil doesn't exist because some deity inflicts it on us deliberately or because the deity in question was rather incompetent. Evil exists because we humans have named something we don't like, and we haven't figured out what to do about the existence of that thing—yet.

Evolution proceeds by aggregation. Simple systems build themselves into more and more complex systems, layer upon layer of self-organizing processes. Indeed it does proceed from less order to more as matter feeds on energy flow. As an alternative scenario to Creation, let's see where this three-step evolutionary paradigm takes us—physical, biological, and cultural.

Our story begins with the Big Bang, which is not an explosion at all. No primordial shrapnel flies off into empty space. Instead, a multi-dimensional "bubble" of space-time forms out of a quantum fluctuation and builds on itself. Titanic energy forces are unleashed. As the bubble spreads, the infant universe cools. Matter crystallizes energy. Matter spreads out smoothly in space-time—almost. Great galactic clusters gravitate around the slight imperfections. Giant stars form, burn their nuclear fuel, build up stores of heavy elements and then explode in spectacular supernovae, spewing their treasure trove into deep space. Much later, new star systems are born as the nuclear furnaces of a new generation of stars ignite within nebular stellar nurseries. Planets clump together out of planetesimals formed in orbit from the nebular remains of the ancient supernovae. Some stars are small, like our Sun, and begin a long, slow career of nuclear fusion, giving any planet orbiting it at the right distance the chance to bear liquid water for at least most of the year in the "water zone," and hence, having a good shot at bearing life.

We do know of at least one planet in which this took place—Earth. At some point, small molecules came together and formed amino acids, the building blocks of life. Research chemist Stanley Fox discovered that by copolymerizing a simple mixture of the twenty amino acids which make up all life on Earth and aspartic acid over low heat, the amino acids would *form themselves* into what Fox called "proteinoids." One would think that these proteinoids would be very disorderly, but they turned out to be orderly, closely resembling proteins produced by biological systems. Like biological proteins, some can act as enzymes, others are hormones. "The only logical explanation [Fox could come up with] was that the reactant amino acids themselves carried the instructions for their own order."

Fox continued to push his analysis of how life may have emerged from non-life in a naturalistic, emergent fashion. He dissolved proteinoids into warm salt water and then allowed them to cool. They aggregated into spherical, fine, cell-like structures which strongly resembled primitive spherical cells found in very early fossils. These *protocells* emerged from the proteinoid mixture as part of large protocell groups. They tended to form as "couples." Opposite-charged protocells attracted one another, just as real biological cells do. From this, Fox deduced that there was no one single "ancestral cell." Protocells gained lifelike attributes in groups.

Biological evolution continues this tendency. It can be described as a bundle of trends operating on large, genetically diverse populations of organisms over an extended period of time. Those organisms which interact with their environment most effectively live long enough to pass on their characteristics to their offspring. Those which don't, don't.

As the environment changes, desirable characteristics change. The environment plays a crucial role in determining the size, shape, hunting and feeding instincts, and mating habits of organisms at any given time. Genetic mutations deepen the gene pool, ensuring the emergence of further diversity from which selective pressures may choose.

The point at which biological evolution and cultural evolution meet is in the human brain. Our brains are powerful pattern hunters. They are primed to seek out and find. They search for every meaningful pattern in the world as if our lives depend on it—because they do!

Our brains enable us to hunt for food and keep a wary eye out for predators, to seek friends who may protect us and guard against enemies who may harm us. During our long history, friends and enemies were not limited to other humans, but were titles bestowed on anything appearing to be sufficiently humanlike to gain our fear and respect. We gave the sun, moon, and stars, thunderstorms, volcanoes and earthquakes the names of spirits and gods and we worshipped them with fear and hope. And thus, religion.

How can three pounds of gray matter perform such magical feats? Our visual cortex, for example, receives the most basic forms of stimuli from the eyes —lines, color, direction. Then, groups of neurons take the resulting information about the outside world and analyze it, giving more weight to some bits of it, while ignoring most perceptions in a manner directed by internal models of the world previously devised by the brain. Larger portions of the brain then push

the analysis of what was perceived to greater and greater levels of abstraction. We "see" whatever we are looking at only after this process is done.

We never experience the world directly, only through these cerebral filters which protect us from the onslaught of sensation of the fuzziness of reality. We perceive reality through lenses of pattern perception which cull and code the vast assemblage of impressions and deductions to make them usable to us.

As a result, we humans become makers. Ever since the first Paleolithic flintknapper chipped his first handaxe, we have imparted design in the world. We naturally see design all around us, and where there is design we believe there must be a Designer, a greater Maker. We project humanlike qualities onto our surroundings, imagining intentionality where none exists.

Evolution is a long, slow, convoluted, impersonal process of development. But, on Earth at least, it led to the development of beings with minds powerful enough to categorize, classify, and model reality, and envision something better. And these beings, our first human ancestors, are the ones who set off an explosion of ideas whose reverberation we feel yet today. If we would further this process of cultural evolution, it behooves us to learn how such systems of self-organization work, so that we may participate in the human part of it knowledgeably and effectively. Evolution may be blind. It is we who see.

Evolution does not make good and evil, right and wrong disappear. These concepts grew naturally in the minds of humans out of hundreds and thousands of generation[s] of hard-earned knowledge. These are cumulative judgments on which things, events and behaviors are helpful and which are hurtful to humans. Every scrap of knowledge that turned out to be crucial in this ancient search for certainties is preserved in our oldest learning tool—human language. If you don't believe language is the keeper of moral system—consult your English thesaurus. Watch the streams of words sculpt the intricate landscape of human aspiration.

Here are just a few synonyms of the adjective 'good' that I have managed to find: virtuous, moral, righteous, honorable, honest, high-minded, noble, lofty, wholesome, pure, chaste, virginal, innocent, unsullied, untainted, pious, saintly, angelic, devout, right, correct, proper, decorous, seemly, permissible, allowable, fit, fitting, suitable, appropriate, timely, well-behaved, obedient, well-mannered, courteous, beneficent, altruistic, benevolent, kind, kindhearted, benign, sympathetic, *humane* [my emphasis].

Words are the keepers of ideas. Ideas are the core of cultural evolution. As you can see by my list, we humans are drenched in moral sentiment, even in this age of apparent moral relativism.

Biological evolution does not command people to be good or bad or anything else. Perhaps this is why many people find the concept of evolution distasteful. It leaves us to our own devices, guided only by our personal and aggregate knowledge and experience, and whatever instinctual attraction or revulsion our biological makeup bequeathed us. Evolution can't condemn anything, not even Hitler or Stalin. But *we* do. Morality is our slow-growing, cultural invention of dire necessity, as necessary to thinking, feeling beings as food and water are. It is not the universe's job to pick up after us. If we judge something or someone evil, it is up to us to stop them and to make sure they

don't do it again. Hitler and Stalin were horribly wrong, not because they fell under the judgment of God or the universe, but because by our lights they and their devoted followers inflicted horrors untold.

The assertion that evolution removes decision-making power from us is just plain false. The opposite, as we've seen, is true. Instead, evolutionary processes explain how spontaneous order occurs in human societies, as well as in physical and biological systems. Self-organization is especially powerful in democratic societies, where large numbers of people wield a large amount of decision-making power and interact with one another freely in enormously complex and creative ways. The traditional religious creation story in which God commands and matter obeys more closely resembles the top-down command system of the traditional medieval monarchy or a dictatorship of the modern era.

In the end, the *Arguments from Design* and *Morality* fail for the same reason. Such arguments seriously underestimate the fecundity of self-organizing systems, and especially the profound creativity of the human mind.

Reality exists. The outside world is demonstrably there and has its own pattern, its own organization. But any indication of intelligent design or command that we may sense within us or see manifested around us lies only within our minds. God does not exist. It is *we* who string beads of light together, crafting the design of the world.

Notes

1. C. S. Lewis, *Mere Christianity,* originally published in 1943 as a compilation of transcripts of radio addresses (New York: Macmillan, 1960), p. 34.
2. Stanley Fox, *The Emergence of Life: Darwinian Evolution from the Inside,* (New York, Basic Books, 1988), p. 64.