IRAS @ 60 and the Future of Religion and Science

with Karl E. Peters, "The 'Ghosts' of IRAS Past and the Changing Cultural Context of Religion and Science"; Michael Ruse, "Why I Am an Accommodationist and Proud of It"; Nancy Ellen Abrams, "A God That Could Be Real in the New Scientific Universe"; Whitney Bauman, "Religion, Science, and Globalization: Beyond Comparative Approaches"; Zainal Abidin Bagir, "The 'Relation' between Science and Religion in the Pluralistic Landscape of Today's World"; Sarah E. Fredericks and Lea F. Schweitz, "Scholars, Amateurs, and Artists as Partners for the Future of Religion and Science"; and Willem B. Drees, "From Authority to Authenticity: IRAS and Zygon *in New Contexts."*

A GOD THAT COULD BE REAL IN THE NEW SCIENTIFIC UNIVERSE

by Nancy Ellen Abrams

Abstract. We are living at the dawn of the first truly scientific picture of the universe-as-a-whole, yet people are still dragging along prescientific ideas about God that cannot be true and are even meaningless (e.g., omniscience) in the universe we now know we live in. This makes it impossible to have a coherent big picture of the modern world that includes God. But we don't have to accept an impossible God or else no God. We can have a real God if we redefine God in light of knowledge no one ever had before. The key question is, "Could anything actually exist in the scientific universe that is worthy of the name, God?" My answer is yes: God is an "emergent phenomenon," as real as the global economy or the government or the worldwide web, which are all emergent phenomena. But God arose from something deeper: the complex interactions of all humanity's aspirations. An emerging God has enormous implications.

Keywords: atheism; complexity; cosmology; creation; emergence; God; philosophy of science; quantum cosmology; spirituality; theology and science

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When I was fifteen, having suffered through eight years of Sunday school, my confirmation class was assigned to write an essay about our belief in God. It was the first time I'd ever thought to put my "belief" into words. Everything I'd heard about God seemed either physically impossible or so

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vague as to be empty. I wrote that God was a fiction invented by weak, comfort-seeking humans. The rabbi took me into his office alone, shut the door, and yelled at me for fifteen minutes. "Who are you," he railed, "to question the wisdom of your ancestors?" Nothing could have more effectively hardened my opinion.

It was twenty-five years before I was forced to revisit it.

I was a philosopher of science, teaching at the University of California, Santa Cruz, and married to Joel Primack, a cosmologist who was working with several colleagues on a daring theory. The great mystery they were trying to solve was this: if the Big Bang was symmetrical in all directions, why isn't the expanding universe today just a bigger soup of particles? Instead, beautiful spiral and elliptical galaxies are scattered throughout the universe, but not randomly: galaxies lie along invisible filaments, like glitter tossed on lines of clear glue. Where several big filaments intersect, great clusters of galaxies have formed. Why? What happened to the soup? Where did all this structure come from?

According to the theory they developed, everything astronomers see in all wavelengths of light with all instruments, including the stars, planets, and glowing gas clouds in our galaxy, and all the distant galaxies, is *less than half of one percent* of the contents of the universe. The universe is almost entirely made of two dynamic, *invisible* presences not made of atoms or the parts of atoms, unknown and undreamed of until the twentieth century, called "dark matter" and "dark energy." Their multibillion year competition with each other dominates the universe, with dark matter's gravity pulling ordinary (atomic) matter together and dark energy flinging space apart. We can't see them because they don't interact with light, but their interaction with ordinary matter has spun the visible galaxies into being and thus created the only possible homes for the evolution of planets and life.

Of course, we didn't know if the theory was true—there was little evidence at first—but psychologically, as serious scientists do, my husband and his colleagues moved into this theoretical universe with total commitment and spent many years exploring every nook and cranny, trying to understand how it worked. Watching this process unfold had a strange and powerful effect on me. I felt I was being introduced to layers deeper than any I had encountered in my life before.

To test the theory, countries around the world built great observatories not only on mountaintops but underground and in space, and the evidence started coming in.

My husband and I talked endlessly. How could we communicate the "double dark" picture to nonscientists? How could we put it into some kind of humanly meaningful context? We developed and spent ten years coteaching a course at the university, which we called "Cosmology and Culture." We began writing a book (Primack and Abrams 2006).

After more than three decades of testing, the evidence is overwhelming and still pouring in. The double dark theory has been confirmed without

a single discrepancy. As wild as it seemed at first, it's now accepted by astronomers worldwide as the foundation of the modern picture of our universe.

The double dark theory in turn incorporates another theory, called cosmic inflation, for which there is also substantial evidence. Cosmic inflation explains the moment before the Big Bang, a moment that set up the initial conditions for the Big Bang. That's another article, but what matters here is that these theories tell our cosmic origin story with the authority of the evidence, and the story does not include God.

So why would I revisit my lifelong opinion that God was a fiction?

The reason was personal. I had been dieting my whole life since I was twelve. I always failed sooner or later and felt worse and worse about myself. Finally I had to accept that I had an actual addiction to mindless eating, and the only way I could possibly recover from it was with a Twelve Step program. So, over the same period that my husband and I were coteaching and coauthoring our books, I was also working a recovery program. Recovery from any kind of addiction presents a huge and unsparing motivation to find what the program calls a "higher power." I was always asking people in the program to explain to me how this higher power worked or what it was, but nobody ever gave me a satisfying answer. As I listened to them, my mind was a Niagara of silent sarcasm. But with no other option, I followed their practical instructions. They suggested I "act as if" I believed in a higher power, so I *imagined* turning my food decisions over to a higher power.

I spoke to some part of my mind as if it were separate, even though it wasn't, and discovered that doing so was surprisingly worthwhile. I had no illusion that I was talking to anything outside myself. I realized that what I was doing was thinking of higher power as a loving but unbullshitable witness to my thoughts. It's what I wished I were. Imagining what such a witness would say, focused me. I found my consciousness less disposed to denial and self-deceit, more honest, and more courageous. My eating habits greatly improved. I was happier. I got along better with everybody. But I had no idea why.

When Twelve Step programs refer to God, the phrase they actually use is "God as we understood Him." Putting aside the masculine pronoun, at first I took this as an admirable statement that people of all religions or none could work the program. Anybody's view of God is okay; just have one. But over time, I began to see that "God as we understood Him," is not just a basket big enough to accept all ready-made concepts of God; it's a *challenge* to me as an individual to find an understanding of my own. Trying to understand is the point. *Honestly trying* to understand is what it takes to recover. I got the sinking feeling that as long as I held on to my lifelong opinion about God, I wouldn't be *able* to honestly try. Yet I had no other choice but misery.

That was a turning point. I became willing to try. Everything changed. I used to wear eye makeup, but for almost a year I found myself crying too often and had to stop. Life felt suddenly raw, unpolished, like finding a shockingly large diamond in the rough. It wasn't pretty, and yet I saw its potential. The willingness to try forced me to start listening differently. It forced me to stop jumping to conclusions when I heard God-talk and instead try to look past the religious metaphors so I could hear what people were struggling to say.

I saw that the mistake I made as a teenager was in assuming that because God could not be what people said it was, God was thereby a fiction. It had never occurred to me that God could be *redefined*. I felt committed to find a higher power of my own understanding—but I had no idea how to do this. Neither, it seemed to me, did anyone else.

Back home I was watching the double dark universe take shape through research now going on around the world. I was following developments, going to the conferences, meeting the scientists, privy to mysteries of the universe that virtually no one else but the experts knew. I was doing metaphysical insider trading. I paid attention to who was working on alternative versions of the details, and what it might mean if this team rather than that one turned out to be right. No civilization has ever tested a view of the universe the way these scientists were doing.

By now my husband and I had coauthored a second book (Abrams and Primack 2011). We traveled around the world, giving over a hundred talks about the new universe and its possible meaning at universities, bookstores, international conferences, astronomy clubs, forums, churches, synagogues, even the U.S. Treasury and the Army Science Conference. Almost everywhere someone would ask me whether I believed in God, but I evaded the question. I had not found any understanding that worked for me.

I knew I could stay in recovery as long as I was honestly searching, even if I never actually found a God of my understanding, so I was never tempted to compromise on reality. I am only interested in God if it's real. But I don't mean real in the commonsense meaning of that term. That is impossible, as I understood at fifteen. The only way God could be real is to be real in the so-far unexplored possibilities of the counterintuitive new picture of the universe.

And then it hit me: the question "Does God exist?" is a hopeless distraction that will never lead anywhere positive. I had to turn the fundamental question on its head. If I wanted to find a God that is real, I had to look for it in what's real. I asked a new question: Could anything actually exist in this universe that is *worthy* of the name God? Instantly the issue shifted from whether God exists to what is worthy of the Name?

We've all grown up so steeped in tradition, whether we've accepted it or rebelled against it, that it's hard to grasp that the chance to redefine God is

actually in our hands. But it is, and the way we do it will play a leading role in shaping the future of our planet. We don't have to hold onto an image of God based on tradition, compulsion, or habit. Ideas of God and gods have been shifting nonstop for thousands of years. We can start rethinking our understanding of God in light of invaluable knowledge no one ever had before.

Science can't tell us with certainty what's true, since there's always the possibility that some future discovery will rule it out; but science can often say with certainty what *can't* be true. Galileo, for example, showed with telescopic evidence that the crystal spheres of medieval cosmology could not exist, even though he could not prove that the Earth moves around the Sun. When scientists produce the evidence that convincingly rules out the impossible, there's no point in arguing. It's over. Grace lies in accepting and recalculating. That's how science moves forward.

What if we thought this way about God? What if we took the evidence of a new cosmic reality seriously and became willing to rule out the impossible? What would be left?

Let me state clearly at the outset of this argument that I am not claiming my view of God is the Truth but simply that it is a fertile and exciting new perspective. If you have a view of God that makes you a loving, wise, and effective person, then of course you should keep it—you're fortunate. I am offering a different path to that goal.

I decided to look at the reasons God seemed unbelievable and ask if they're really essential or just traditional. The results of this exercise amazed me. It seems to me that none of the characteristics attributed to God that conflict with science actually *matter*. We can let them go.

These are impossible characteristics:

(1) God existed before the universe.
(2) God created the universe.
(3) God knows everything.
(4) God plans what happens.
(5) God can choose to violate the laws of nature.

As Shakespeare put it in *Richard II*, "Superfluous branches we lop away that bearing boughs may live." These claims are superfluous branches that must be lopped away that a real God may live. These beliefs cannot be literally true in our universe. To the extent we cling to them, even as metaphors, we are *rejecting our universe*.

When religions credit God with powers that science tells us can't exist, those trying to practice the religion are set up for inevitable doubt, which in turn requires of them an exhausting effort to jack up their faith in order

to fight the evidence. This is self-sabotage—all that effort and worry is being expended to defend characteristics of God that no one really needs.

The price of a real God is that we have to consciously let go of what makes it unreal. God can't be everything, or it will mean nothing. We all need hope and comfort and inspiration, but we also need the built-in bullshit detector of science.

If you've never taken these five ideas literally but instead seen God as simply a word for the sense of wonder, of the unknown, of endless possibility, of cosmic connection, and of the opportunity to not need all the answers, then it may perhaps seem silly to bother refuting them one by one. Yet I would be surprised if your sense of wonder, of the unknown, cosmic connection, and endless possibility connected with the idea of God was not based on an unconscious lifelong association of God with at least some of these impossible characteristics.

Let me summarize the arguments.

(1) *God could not have existed before the universe.*

Everything we know about the universe tells us that *complexity evolves* from simpler states of being, so there could not have been an intelligence complex enough to design anything at all, let alone a universe, before cosmic evolution even began.

(2) *God could not have created the universe.*

The universe evolved, and once life got a foothold on the Earth, life evolved. Many people today like to think that God could have created the universe by setting evolution off and *using evolution as His means of creation*. That theory may sound scientific, but it doesn't work. Evolution is not a path that can be intentionally employed to achieve anything. Biological evolution is unpredictable in principle because it depends on random mutations interacting with a changing environment. So, if a Creator God had any particular intention before starting—for example, to create a creature like us—that would never be what ended up evolving.

Many atheists have used the impossibility of God creating the universe to argue that therefore God does not exist, case closed. But in fact, this doesn't rule out God. It only rules out a God that existed before the universe and created it. Why does God have to have created the universe? Millions of people have prayed to gods and saints who didn't create the universe. Surely that is not essential for a God to be real, inspiring, and helpful. It's not possible anyway.

(3) *God can't know everything.*

What we call the "visible universe" is only a small patch of the far larger universe created by the Big Bang. It's visible to us because light has had time to get to us from all parts of it. But there hasn't been time enough

since the Big Bang for light or information to have arrived from the rest of the expanding universe outside our visible patch. No matter where you are in this universe, you're surrounded by a horizon. The universe beyond your visible patch is a kind of "elsewhen" that is simply over the rainbow. No unified intelligence or perception could ever know the details of what was going on or had gone on *everywhere*. There is no overall truth for God to know. Most truth is local.

The natural temptation is to get around these limits to omniscience by claiming that God is "everywhere" and thus knows all local knowledge and sees all viewpoints, but the speed of light, which is the cosmic speed limit, would prevent such a God from even being aware of its own full self.

Could we say that God *is* the universe? We could say it, but how would that help? We already have a name for the universe. A synonym would add nothing so valuable to our lives or understanding that it could possibly outweigh the suffering and conflict that attachments to God have cost and continue to cost humanity. God has to be hugely valuable to compensate for that.

(4) *God doesn't plan what happens.*

Planning the future of the universe is impossible. Whizzing elementary particles make up our bodies, our brains, and our world. Even though, statistically, the collective behavior of elementary particles can be predicted to a ridiculous number of decimal places, the behavior of any single particle cannot be predicted *in principle*, according to quantum physics. But what a single particle does can make all the difference. One random cosmic ray hitting a replicating DNA molecule can send evolution off in a new direction.

The future of any one of us is unpredictable even in principle because it is subject to countless interacting possibilities, which are each in turn subject to countless interacting possibilities, ad infinitum. And yet, just as with elementary particles, statistical probabilities can be surprisingly determined. The number of people who will be killed on U.S. highways next Labor Day weekend or shot in Chicago next year can be predicted with eerie accuracy, but who those people will be, cannot. There is no plan for any individual.

(5) *God cannot violate the laws of nature.*

Nothing that exists in the real universe can violate the laws of nature, since what exists is an expression of those laws. If something real looks like a violation, it's because we haven't fully understood the laws. Anything that is real, is real because it is permitted by nature and in harmony with it.

This list of what God can't be or do generally agrees with most atheists' reasons for concluding that therefore God does not exist. But this is no place

to stop. We've merely stated what God can't be. We haven't considered yet what God *could* be.

For God to be real, that consideration has to arise from the principles that govern reality. So here's the idea that has changed my whole attitude and outlook toward God: emergence. Emergence is becoming one of the central ideas of modern science but is still at an early and somewhat controversial stage. The theory of emergence is young, but the process of emergence is as old as the cosmos. Understanding it opens a vast and bountiful new possibility for God.

Emergence

The basic idea of emergence is this. As the evolving complexity of any system increases by many orders of magnitude, the system stops just getting bigger and more complicated, and it turns into something new. Something radically original *emerges*, but that something can only be seen from the vastly larger perspective. In other words, as the number of interacting parts increases, those parts remain what they are *when viewed at their size scale*, but at a larger size scale they merge and lose their identity and become something new, governed by new laws.

Long ago the first atom of oxygen cooked up inside a star got blown out into space as the star exploded in a supernova. It ran into two hydrogen atoms that had been streaming aimlessly through space since the Big Bang, and together they became the first molecule of H_2O. For that single water molecule, the concepts of "liquid," "ice," and "water vapor" would have been utterly meaningless. A molecule can't be liquid or ice or vapor. But as time brought together many billions of H_2O molecules in different places and under different conditions, liquid, ice, and water vapor all came into existence. They are what is called "emergent phenomena." The same happens with temperature or pressure. No molecule has a temperature or pressure, but put billions of them together and suddenly the system has temperature and pressure.

Where do these real and measurable phenomena come from? Emergence.

Here's a simple example of emergence in life.

Ants are fabulously successful from an evolutionary point of view. They're on every continent except, ironically, Antarctica. Collectively they bulldoze immense amounts of the surface of the Earth, redistributing nutrients. But no ant knows this. They communicate by (involuntarily) emitting and responding to pheromones (scent molecules). They can recognize a dozen or so pheromones and can sense where those pheromones are more intense. They also recognize frequency and note the difference between meeting two ants in a minute and 200. That's about the extent of their individual communication abilities. But if we observe 10,000 of them in a colony, a "swarm logic" will have emerged. A harvest ant *colony* is con-

tinually adjusting the number of ants foraging for food, based on several factors: the number of mouths to feed, how much food is stored in the nest, how much food is available in the vicinity, and whether other colonies are out there competing. The colony prioritizes food sources based on distance and accessibility. Yet no ant understands any of this. The colony can engineer the construction of an anthill higher than a man, but there are no ant engineers. Over many years the colony will go through predictable stages of development, from daring youth to conservative maturity to death, yet no ant lives more than a tiny fraction of that time. What is going on? How does swarm logic emerge?

The answer is that each ant simply pays attention to its nearest neighbors and to pheromone trails. It doesn't wait for orders. It doesn't know how many foragers or trash collectors are on duty at any given time, but it can keep track of how many of each kind of worker it has run into in its daily movements, because different jobs are associated with different pheromones, and these encounters make the ant adjust its own behavior. Based on a few simple rules that each ant follows, the social system is *self-organizing* in a way that is astonishingly successful. To solve the kind of problems we would hand over to experts, the colony uses statistical probabilities. For every ant that overestimates a number, there'll be one that underestimates and the result is a wash. The colony has far more sophisticated abilities than its members do. *Or so we humans understand it*. The ants don't.

What the colony is doing on the large scale is something a consciousness must be large scale enough to perceive and give meaning to. The emergent behavior of ant colonies is a discovery by human beings, because we're the ones with the larger perspective.

What does emergence look like in our human world?

What, for example, is a market? There's a market in corn, in oil, in stocks and bonds, in everything people want and trade, but where is it? A constantly varying cast of characters is participating and influencing the markets. Millions of people are making decisions, sometimes irrationally, about where to spend or invest varying amounts of money. No one, including the professionals, understands all the rules, and no one can predict outcomes every time, though many try. Nevertheless, markets unquestionably *exist* and they speak with precision and we grant them an almost terrifying amount of authority. They affect the price and availability of everything we buy.

A market is an emergent phenomenon. Just as temperature doesn't exist for a handful of molecules, a market doesn't exist if there are only a few people. It emerges from the interacting collective economic ambitions, analysis, reasoning, actions, opportunities, resources, fears, and opinions of a vast number of people. "The market" can seem to have its own intelligence. It's taken as a final judgment when someone says, "The market has spoken." Millions defer to it.

When we think of all the markets together, something new and vastly more complex than any of them emerges—the global economy, which no human fully understands.

Is the global economy something real, or is it just an idea?

Suppose we say that the global economy is *not* real: it's just our way of understanding a lot of individual people doing stuff. If we say this, then we're choosing to say that emergent phenomena are not real. But that includes ourselves, since complex creatures like us are emergent phenomena. *All large animals are emergent phenomena*. Think about what's going on inside us. From our elementary particles organic chemicals have emerged; from the chemicals, microbes emerge; from microbes coming together and forming a membrane around themselves, living cells emerge; from cells organisms emerge; from simple organisms complex ones emerge; from brains that evolved to run complex bodies, consciousness has emerged, with many levels of emergence in between all those stages.

If we decide that emergent phenomena are not real, then what we are saying is that *nothing exists but elementary particles whizzing around meaninglessly* (even though we know that meaning exists, or you would not be reading). There are some physicists and philosophers who argue intellectually that only the particles are real—but I have yet to meet a single one who lives as if he actually believes it. Because they'd have to believe that we humans are not real but an illusion—in whose mind I don't know. If we are not real by our physical standards, then we are insane by our psychological standards. This is not only an unhealthy outlook: it is not supported by modern science. Emergent phenomena are as real as their constituent parts—which are often emergent phenomena themselves, made of still smaller parts.

God is an emergent phenomenon that can only have arisen from humanity. Humanity came first, but as God emerges it's continually becoming real.

But what aspect of us could God emerge from? Unlike the civilizing goals that led to government, or the financial activities that led to an economy, whatever led to God has to be something our distant ancestors were already doing deep in prehistory, something so ancient and fundamental that it was in them long before the first ideas of God arose. It has to be so basic to us that without it, we might not be human. What could that be?

What truly defines us?

Various scholars have suggested tool-making or language or abstract thinking.

But as science progresses, we've discovered we're not the only toolmakers; many primates, for example, use sticks or grass to fish termites out of logs and use stones to crack nuts. We're not the only thinkers; a species of crow has been shown to reason out simple mechanical problems in advance without even having to go through trial and error. We're not the

only communicators; many animals communicate warnings, invitations, pleasure, and threats by sounds and signals. So what makes us distinctive?

When you really come down to it, what makes us distinctive is that we humans change and grow not just because we have to in order to adapt to external conditions *but because we aspire to something more*. There is no sign the other animals use their abilities to create meaning or a better life for their children than they had.

We humans are the aspiring species. Aspirations are not the same as desires, like food, sex, and security. Every animal has these desires from instinct alone. Aspirations reach beyond survival needs, to something that *shapes* each of us into an individual. Aspiration isn't always to create; it could be to restrain ourselves to fit in better. We all aspire to different things. *Because* we feel driven to know more, to be better, to do better, to create, to get more, to be safer, to be more loved, we have become far more than the sum of our instincts.

Our aspirations are our defining characteristics; they are our purpose. Without aspirations, we're just meat with habits. We each know that's not true about ourselves; surely we can't believe that about other people. Aspirations are among the abstractions like love that are the most real to us.

God is endlessly emerging from the staggering complexity of all humanity's aspirations, interacting across time. From the expanding complexity of generations of aspirations mixing and cross-fertilizing, gods emerged virtually everywhere there were people, even in isolated communities. The emerging God is wherever we humans are.

The idea that God emerges from human aspirations turns out to be not just an intellectual notion but, as I've mentioned, an astonishingly fertile perspective.

It casts human progress in a new light. Our ancestors over tens of thousands of years *collectively* created almost everything that is now most important to us and most influential over our lives. Language, cooking, agriculture, technologies, government, the economy, science, education, art, religion—these aren't fictions. They're emergent phenomena that emerged from *different aspects* of human behavior. They're real, even though they're always changing and no one can completely define what any one of them actually is.

I'm exploring what we humans choose to call *real*, because this choice is our big opportunity. If we let the nature of the universe teach us about God, we can free ourselves from the fuzzy spiritual thinking that is preventing us from demanding— and discovering—a real God.

A radically superhuman, demonstrably powerful planetary phenomenon has, by the laws of physics, emerged from the dreams and strivings of all humanity. By holding our aspirations it encompasses all that humanity has *collectively* achieved. In this sense, God is indeed a creator—of tool-making, ritual, and language, and later of ideals like truth, freedom, and equality, which have taken hundreds of generations to clarify in practice.

Do we have to call this emergent phenomenon "God"? No. But it must be recognized, because it is real. And when you search for a name for it, it may be the only thing that exists in the modern universe that is worthy of the name God.

Of course, you can't just choose a God for logic or convenience and actually believe in it—it has to work in your life before it will convince you of its value. To be worthy of the Name, the emerging God still has to do for us the *essential* things that the divine has always done. Give us hope and confidence and a big new perspective. Nurture our aspirations. Open our minds and hearts so we can feel our deep ties to each other, to the future, and the planet. Inspire our personal quest for meaning and bravery in an often frightening world. Give us common ground. Less than that is not worthy of being called God. But more than that is unnecessary.

No one can say, at least not yet, what the emerging God is like or what powers it may have, but we have an *origin story* for it. Here are a few things the story implies.

God did not create the universe, but God created the meaning *of the universe*. There is something out there that is 13.8 billion years old, from which our galaxy and our solar system evolved, but God had nothing to do with it because God didn't exist then. However, if God had not emerged later, whatever is out there would remain unknown and meaningless, as it is to the other animals on the earth. It wouldn't even be a "universe," because "universe" is an idea and there would be no ideas. In this sense, God has indeed created order from chaos.

God started small and simple. This is how everything in the universe, and the universe itself, started. God emerged perhaps when early humans began to share intentions and discovered they could cooperate to do something they could not do alone, something they'd nevertheless somehow imagined doing. Wondering what surrounded them, why they were here, and how they should live, our ancestors invented communal rhythm, symbols, stories, and rituals. From instant to instant, from then till now, the emerging God has been growing with the endless aspirations of the billions of us now around the planet.

God is not in some spiritual realm immune to the laws of physics. God lives right here on the earth and connects all of us humans, not only to ourselves and to each other but to our ancestors back hundreds of thousands of years.

The emerging God is in perpetual dialogue with all of us. Most religions aim to help people experience communion with the divine. But we are automatically in communion with the emerging God just by living in human society. We feed God; it feeds us. If God is emerging, then we are each *directly* plugged into it at every instant. God is infinitely complex and ever-expanding, but it has a relationship with every one of us.

The emerging God is a planetary phenomenon. It's the God of all humanity, but only humanity. If enough of us simply grasped that God cannot be

literally universal, this alone would change the world. The sacredness of God is not in its size but in its connection to us.

God doesn't favor some people over others. The emerging God can no more discriminate among us than gravity can. Gravity doesn't know who we are. Nevertheless, there are dancers and acrobats who work with gravity in amazing ways, and there are klutzes who can barely walk through a room without knocking something over. Is gravity responsible for their differences? No, it's what they choose to do with gravity, and what they train themselves to do.

The same is true of God. What makes the difference between being a spiritual dancer and a klutz is what we do with our *inevitable* connection to the emerging God. The more we train our consciousness to live in awareness of it and come into harmony with it, the more of it we can access and the more we come into sync with the real universe. We not only find our place in the cosmos; we become conscious participants in the cosmos. This to me is spirituality.

What a blessing to be free of the need to justify suffering as something God allows for His own inscrutable reasons. Did something terrible ever happen to you or to someone you love? God had nothing to do with it. God doesn't control events. God influences how we see the events and interpret them. God doesn't control whether people get sick. God influences how our community understands illness and responds to it. God is a collective phenomenon—and yet it is also us. It's made of us.

Once you begin to see God as real in this universe, you understand that you are not only part of God but part of many other emergent phenomena too—a community, a language, perhaps an industry, a political movement, an art, a field of study, the planet, the future, the galaxy—which means our full identities are much larger and richer than we realized. No earlier generation could even have imagined the scale of our true identity. We don't have to be like the ants, who lack the brains to appreciate the scale of their own meaning. We're part of a cosmic venture: the 13.8-billion-year evolution of complex intelligent life from nothing but particles and energy. The way humanity defines God can either bless this extraordinary cosmic venture or choke it to death. God still matters.

Note

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References

Abrams, Nancy Ellen, and Joel R. Primack. 2011. *The New Universe and the Human Future: How a Shared Cosmology Could Transform the World*. New Haven, CT: Yale University Press.

Primack, Joel R., and Nancy Ellen Abrams. 2006. *The View from the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos*. New York: Penguin.