

NOT A CHANCE

GOD, SCIENCE, *and the* REVOLT
AGAINST REASON

EXPANDED
EDITION

R.C. SPROUL
and KEITH MATHISON



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In memory of
Stanley L. Jaki
(1924–2009)

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PREFACE TO THE EXPANDED EDITION

IN THE TWENTY YEARS since the publication of the first edition of *Not a Chance*, science has continued to make great advances. In 1995 astronomers detected the first extra-solar planet. Since then, over two hundred planets outside of our solar system have been discovered. The mapping of the human genome in 1999 was a milestone in biology. An amputee was fitted with robotic limbs directed by nerve impulses in 2001, opening new doors for the disabled. In 2012 physicists at the world's largest particle accelerator (CERN) announced that they had discovered an elementary particle consistent with the theorized Higgs boson (a particle that had eluded scientists since the 1970s).

These discoveries and many others have added to man's store of knowledge regarding God's creation. But along with

the genuine scientific advances, there still exists an undercurrent of irrationalism in the writings of scientists. I wrote *Not a Chance* to protest against nonsensical statements in scientific theories—statements that violate the laws of logic. The original chapters of the book focused on the irrational idea that “chance” is a causal force or power and the equally irrational idea of self-creation. While many critics of the book argued that no scientists actually believe that chance has the power to do anything, some scientists continue to speak as if they believe this, and this careless use of language remains as harmful to science today as it was twenty years ago.

Since the original publication of this book, a third irrational idea has gained some prominence in popular scientific writing, namely, the idea that something can come from nothing. I have asked Keith Mathison to address this idea in a new chapter to *Not a Chance*, “*Ex Nihilo, Nihil Fit.*” He has also written a new appendix, a review of Stephen Barr’s 2003 book, *Modern Physics and Ancient Faith*, a book that claims the scientific discoveries of the twentieth century support traditional theism. These additional materials bring the argument of the book up to date.

One final point regarding the authorship of these chapters may call for some clarification. Readers will, on occasion, notice the use of the first person pronoun “I” in these chapters and appendices. In the first ten chapters, which I (R. C. Sproul) wrote, the pronoun “I” refers to me. In the final chapter and in the new appendix, “I” refers to Dr. Mathison. We trust that you will find in these chapters a rational response to pseudoscientific nonsense.

R. C. Sproul
Sanford, FL
2013

PREFACE TO THE FIRST EDITION

IN HIS CONTROVERSIAL BOOK *Worlds in Collision*, which once piqued the curiosity of Albert Einstein, Immanuel Velikovsky studied the mythology of ancient cultures in search of clues for prescientific information about astronomical perturbations and catastrophic cosmic upheavals. Velikovsky did not regard ancient myths as an exercise in sober historical narrative. He viewed mythology as fanciful, creative, imaginative attempts to explain the unknown powerful forces that impact human life. In a word, what we don't understand we tend to explain in terms of myths.¹

We have a tendency in our day to think of mythology as a literary enterprise of primitive, ignorant, prescientific cultures. This tendency errs in two directions. On the one hand it is the nadir of arrogance for us to assume that ancient

civilizations were primitive, ignorant, or prescientific. The Egyptians, Chinese, Babylonians, Romans, and Greeks, for example, were anything but primitive or ignorant. They all achieved extraordinary levels of scientific advancement. Yes, they had mythology, but they had their serious science as well.

The second error is to relegate mythology to the past, making it an addiction practiced only by premodern cultures. On the contrary, mythical approaches to life and learning persist in every culture. Mythology continues to intrude in the arena of religion. It is commonplace in the superstitions that abound among athletes in professional sports. It is found in a host of medicinal home remedies that are often classified under the rubric of “old wives’ tales.”

Mythology also intrudes into the realm of science. Uncritically accepted hypotheses and theories of the past die a slow and reluctant death. We have seen the resistance the church has displayed against new advances in scientific knowledge, the Galileo episode being the most famous. But it is not only the church that offers resistance. Even in Galileo’s day opposition to him was heavily laden by scientists whose pet theories and accepted traditions were crumbling under the weight of new empirical evidence.

One myth that has found its way into modern thought and is entrenched in some circles is the myth of chance. In this myth the word *chance* itself undergoes an evolution and takes on new meaning. Where the word was once largely restricted to describing mathematical probability quotients, it took on a broader application to include far more than probabilities or coincidences. It has been used as a word to describe either the absence of cause or even a causal power itself. Mortimer Adler notes this new usage: “There is still a third sense of

‘chance’ in which it means that which happens totally without cause—the absolutely spontaneous or fortuitous.”²

With the elevation of chance to the level of a real force, the myth serves to undergird a chaos view of reality. Buttressed by inferences drawn from quantum theory, the idea that reality is irrational rather than coherent gained popularity.

James Gleick, in his book *Chaos: Making a New Science*,³ describes the new shift away from chaos to new paradigms that seek the coherence underlying the surface appearance of chaos. Part of the struggle of science is the information explosion. As data proliferate, strain is put on old paradigms to accommodate them. The Hubble Space Telescope stretches our reach ever deeper into space, adding new information to the “far” of the universe. New levels of sophistication in microscopes push the horizons of the near and the small beyond former limits. As we probe the seemingly infinite and the infinitesimal, we are left with aching paradigms stretched to the breaking point.

The Enlightenment dream of discovering the “logic of the facts” has become a nightmare for many. Some have responded by abandoning logic altogether. It is when logic is negotiated or abandoned that myth is given fresh impetus. The twin enemies of mythology are logic and empirical data, the chief weapons of true science. If either weapon is neutralized, mythology is free to run wild.

This book is an effort to explore and critique the role chance has been given in recent cosmology. It may be viewed as a diatribe against chance. It is my purpose to show that it is logically impossible to ascribe *any power* to chance whatsoever.

It is not merely a parlor game of logic. There is something huge at stake: the very integrity, indeed the very possibility of science.

PREFACE TO THE FIRST EDITION

Diatribes may represent the unbridled ravings of fools. They may also represent the serious protests of the learned. I hope this work proves to be more of the latter than of the former.

R. C. Sproul
Orlando
Advent 1993

1

THE SOFT PILLOW

[Chance] has become for me a soft pillow like the one which . . . only ignorance and disinterest can provide, but this is a scientific pillow.

Pierre Delbet

AS LONG AS CHANCE RULES,” Arthur Koestler has written, “God is an anachronism.”¹ Koestler’s dictum is a sound conclusion . . . to a point. It is true that if chance *rules*, God cannot. We can go further than Koestler. It is not necessary for chance to rule in order to supplant God. Indeed chance requires little authority at all if it is to depose God; all it needs to do the job is to exist. The mere existence of chance is enough to rip God from his cosmic throne. Chance does not need to rule; it does not need to be sovereign. If it exists as a mere impotent, humble servant, it leaves God not only out of date but out of a job.

If chance exists in its frailest possible form, God is finished. Nay, he could not be finished because that would assume he once was. To finish something implies that it at best was once active or existing. If chance exists in any size, shape, or form, God cannot exist. The two are mutually exclusive.

If chance existed, it would destroy God’s sovereignty. If God is not sovereign, he is not God. If he is not God, he simply *is* not. If chance is, God is not. If God is, chance is not. The two cannot coexist by reason of the impossibility of the contrary.

This book, however, is not about God. It is about chance. It is about the existence of chance and the nature of chance.

WHAT IS CHANCE?

We begin by asking the simple but critically important question, What is chance? Because this question is so critical, however, I think it is important first to explain why the definition of *chance* is so crucial.

Words are capable of more than one meaning in their usage. Such words are highly susceptible to the unconscious or unintentional commission of the fallacy of equivocation. Equivocation occurs when a word changes its meaning (usually subtly) in the course of an argument. We illustrate via the classic “cat with nine tails” argument.

PREMISE A: No cat has eight tails.

PREMISE B: One cat has one more tail than no cat.

CONCLUSION: One cat has nine tails.

We see in this “syllogism” that the word *cat* subtly changes its meaning. In premise A “no cat” signifies a negation about cats. It is a universal negative. In premise B “no cat” is suddenly given a positive status as if it represented a group of comparative realities. Premise B assumes already that cats have one tail per cat. If we had two boxes, with one box empty and the second containing a single cat, we would expect to find one more cat in that box than in the empty one. If cats

normally have one tail, we would expect one more cat's tail in one box than in the other.

The conclusion of this syllogism rests on the shift from negative to positive in the phrase *no cat*. The conclusion rests upon equivocation in the first premise. "No cat" is understood to mean a class of cats (positively) that actually possesses eight tails.

Such equivocation frequently occurs with the use of the word *chance*. We find this in the writings of philosophers, theologians, scientists—indeed pervasively. Here's how it works.

On the one hand the word *chance* refers to mathematical possibilities. Here *chance* is merely a formal word with no material content. It is a pure abstraction. For example, if we calculate the odds of a coin flip, we speak of the chances of the coin's being turned up heads or tails. Given that the coin doesn't stand on its edge, what are the chances that it will turn up heads or tails? The answer, of course, is 100 percent. There are only two options: heads and tails. It is 100 percent certain that one of the two will prevail. This is a *bona fide* either/or situation, with no *tertium quid* possible, unless of course it is wedged on edge.

If we state the question in a different manner, we get different odds or chances. If we ask, "What are the chances that the coin will turn up heads?" then our answer will be "fifty-fifty."

Suppose we complicate the matter by including a series of circumstances and ask, "What are the odds that the coin will turn up heads ten times in a row?" The mathematicians and oddsmakers can figure that out. In the unlikely event that the coin turns up heads nine consecutive times, what are the odds that it will turn up heads the tenth time? In terms of

the series, I don't know. In terms of the single event, however, the odds are still fifty-fifty.

Our next question is crucial. How much influence or effect does chance have on the coin's turning up heads? My answer is categorically, "None whatsoever." I say that emphatically because there is no possibility, real or imagined, that chance can have any influence on the outcome of the coin toss.

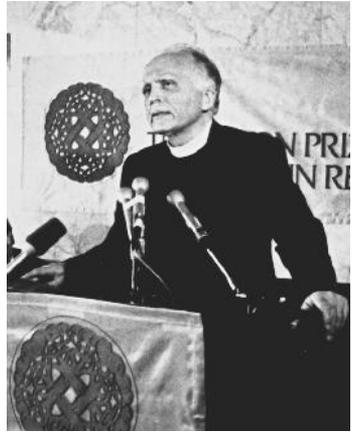
Why not? Because chance has no power to do anything. It is cosmically, totally, consummately impotent. Again, I must justify my dogmatism on this point. I say that chance has no power to do anything because it simply is not anything. It has no power because it has no being.

I've just ventured into the realm of ontology, into metaphysics, if you please. Chance is not an entity. It is not a thing that has power to affect other things. It is no thing. To be more precise, it is *nothing*. Nothing cannot do something. Nothing is not. It has no "isness." Chance has no isness. I was technically incorrect even to say that chance is nothing. Better to say that chance is not.

What are the chances that chance can do anything? Not a chance. It has no more chance to do something than nothing has to do something.

It is precisely at this point that equivocation creeps (or rushes) into the use of the word *chance*. The shift from a formal probability concept to a real force is usually slipped in by the addition of another seemingly harmless word, *by*. When we say things happen "by chance," the term *by* can be heard as a dative of means. Suddenly chance is given instrumental power. It is the *means* by which things come to pass. This "means" now assumes a certain power to effect change. Something that in reality is nothing now has the ability or power to do something.

Stanley L. Jaki in *God and the Cosmologists* gives a vigorous critique of the sloppiness by which the word *chance* is used in modern scientific and philosophical discussion. His chapter entitled “Loaded Dice” is a tour de force on the subject. In canvassing current cosmological science, Jaki provides some astounding quotes. What follows is an analysis of some of these citations.



Stanley L. Jaki (1924–2009)

DELBET’S SOFT PILLOW

Jaki cites Pierre Delbet’s work *La science et la réalité*, published in 1913: “Chance appears today as a law, the most general of all laws. It has become for me a soft pillow like the one which in Montaigne’s words only ignorance and disinterest can provide, but this is a scientific pillow.”²

Jaki calls this “the softest ‘philosophical’ pillow in all scientific history,” adding that “once more, as so often in that history, most successful mathematical formulas served as magic tools for making shabby philosophizing a most respectable attitude.”³

Jaki’s choice of descriptive terms is apropos. He speaks of “magic tools.” The customary tool of the magician is the magic wand. The wand is waved over the empty hat accompanied by such incantations as “Abracadabra” and “Voilà!” The rabbit appears—*ex nihilo*. With this feat of prestidigitation the magician violates the oldest and most inviolate law of science: *Ex nihilo, nihil fit* (“Out of nothing, nothing comes”).

The magic, however, resides neither in the wand nor in the incantation. It is done via illusion. The trick rests upon the power of a mirror. The magician's hat (or box) is neatly divided into two compartments separated by a mirror. The cover or lid is opened halfway for the audience to inspect. Even if one peers into the hat from close range, he seems to behold a completely empty hat. What he actually views is half an empty hat and the mirror image of the empty half, which looks like a whole empty hat. Concealed behind the mirror is half a hat full of a rabbit (probably uncomfortable enough to agitate animal-rights devotees).

The trick requires only a modicum of sleight-of-hand dexterity to pull off. It is accomplished easily once one has the proper "magic tools." When scientists attribute instrumental power to chance, they have left the domain of physics and resorted to magic. Chance is their magic wand to make not only rabbits but entire universes appear out of nothing.

Delbet's metaphor is an apt one. Chance is indeed a "soft pillow." Pillows are used for sleeping as an aid to comfort. The soft pillow of chance has introduced a whole new era of dogmatic slumber. When the scientist dreams of chance he is dreaming of nothing, which, as Martin Luther once declared, "is not a little imperfect something."⁴

Puritan theologian and philosopher Jonathan Edwards once mused, "Nothing is the same that the sleeping rocks dream of."⁵ Now Delbet offers a comfortable pillow to aid the rocks in their reverie. However, even in our wildest dreams chance, which is nothing, cannot do something. To attribute causal power or any power to chance is to suffer from rocks in one's head. The pillow image suggests a lapse into unconsciousness by which otherwise brilliant thinkers take a nap. Their rational faculties have gone to sleep, blissfully imitating the rocks while they dream of nothing.

Though I poke fun at Delbet's soft pillow, it is ultimately no laughing matter. I don't think Jaki is indulging in hyperbole when he calls this concept of chance "the softest 'philosophical' pillow in all scientific history."⁶ The soft pillow has not induced a sweet dream; it has provoked a nightmare.

The nightmare is not so much one about theology or philosophy, though it touches heavily on both; it is a nightmare for natural science. It reduces scientific investigation not only to chaos but to sheer absurdity. Half of the scientific method is left impaled on the horns of chance. The classical scientific method consists of the marriage of induction and deduction, of the empirical and the rational. Attributing instrumental causal power to chance vitiates deduction and the rational. It is manifest irrationality, which is not only bad philosophy but horrible science as well.

Perhaps the attributing of instrumental power to chance is the most serious error made in modern science and cosmology. It is certainly the most glaring one. It is serious because it is a patently false assumption that, if left unchallenged and uncorrected, will lead science into nonsense.

When Immanuel Kant read the works of David Hume, he exclaimed that he was awakened from his dogmatic slumbers. His *Critique of Pure Reason* was written with the purpose of saving empirical science from Hume's thoroughgoing skepticism. We need a similar awakening among cosmologists today who will lift their nodding heads from Delbet's soft, comfortable, but deadly pillow.

THE PROBLEM WITH SELF-CREATION

When the magic wand of chance is waved often enough and the pillow is soft enough, the second law that is transgressed

is the law of noncontradiction. Magic and logic are not compatible bedfellows. Once something is thought to come from nothing, something has to give. What gives is logic.

To argue that something comes from nothing requires the denial of the law of noncontradiction. The law states simply that A cannot be A and non-A ($\neg A$) at the same time and in the same relationship. Something can be A and B at the same time but not in the same relationship. I can be a father (A) and a son (B) at the same time, but not in the same relationship.



Immanuel Kant (1724–1804)

For something to come from nothing it must, in effect, create itself. Self-creation is a logical and rational impossibility. For something to create itself it must be able to transcend Hamlet's dilemma, "To be, or not to be." Hamlet's question assumed sound science. He understood that something (himself) could not both be and not be at the same time and in the same relationship.

For something to create itself, it must have the ability to be and not be at the same time and in the same relationship. For something to create itself it must be *before* it is. This is impossible. It is impossible for solids, liquids, and gasses. It is impossible for atoms and subatomic particles. It is impossible for light and heat. It is impossible for God. Nothing anywhere, anytime, can create itself.

A being can be self-existent without violating logic, but it cannot be self-created. Let's summarize the train of thought

we are following. The assertions I am making include the following:

1. Chance is not an entity.
2. Nonentities have no power because they have no being.
3. To say that something happens or is caused by *chance* is to suggest attributing instrumental power to nothing.
4. Something caused by nothing is in effect self-created.
5. The concept of self-creation is irrational and violates the law of noncontradiction.
6. To persist in theories of self-creation one must reject logic and rationality.

I grant that bold claims to self-creation are somewhat rare in scientific discussion. Usually the concept of self-creation is elliptical or camouflaged by obfuscatory language. The rose of self-creation usually blossoms under another name. The language of studied ambiguity triumphs here.

The French Encyclopedists solved the problem of language by masking the concept of self-creation under the rubric of “spontaneous generation.” The term may be legitimately used to refer to sudden generation via imperceptible causes. It frequently functioned in the past, however, as a cloak for the concept of self-creation. Spontaneous generation made the God hypothesis unnecessary for Denis Diderot. Indeed he was right. If a universe can spontaneously generate itself, who needs a Creator?

By the time I went to grammar school, the idea of pure spontaneous generation (à la self-creation) was largely discredited. Our science teacher smiled benignly at the folly of previous generations (unspontaneously generated generations) who had entertained and propagated such nonsense. The obituary for spontaneous generation, however, was

premature. The naked concept continues to strut about like the unclad emperor of yore.

I read a statement from a Nobel laureate in physics who declared that the days of speaking of spontaneous generation are over. He urged his readers to abandon the notion. He said henceforth we must speak of *gradual* spontaneous generation.

I am not exactly sure what *gradual spontaneous generation* means. Does it mean that something cannot create itself quickly? Is all that is lacking sufficient time to accomplish the task? Perhaps it is too much to expect from nothing that it generate something suddenly. But given enough time, it can do the job.

WALD'S MIRACLES

Jaki cites the Nobel laureate George Wald: “One has only to wait: time itself performs the miracles.” “Given so much time,” continued Wald, “the ‘impossible’ becomes possible, the possible probable, and the probable virtually certain.”⁷ Here is magic with a vengeance. Not only does the impossible become possible; it reaches the acme of certainty—with time serving as the Grand Master Magician.

In a world where a miracle-working God is deemed an anachronism, he is replaced by an even greater miracle worker: time or chance. I say these twin miracle workers are greater than God because they produce the same result with so much less, indeed infinitely less, to work with.

God is conceived as a self-existent, eternal being who possesses intrinsically the power of being. Such power is a sufficient cause for creation. Time and chance have no being and, consequently, no power. Yet they are able to be so effective as to render God an anachronism. At least with God we have a

potential miracle worker. With chance we have nothing with which to work the miracle. Chance offers us a rabbit without a hat and—what’s even more astonishing—without a magician.

That the concept of self-creation persists almost unchallenged can be illustrated by a news report I heard on the radio when the spacecraft carrying the Hubble Space Telescope was launched. The report quoted a noted scientist who declared, “Fifteen to seventeen billion years ago the universe exploded into being.” The operative words here are the last three, “exploded into being.” This is an assertion loaded with ontology. It is one thing to say that billions of years ago the universe experienced a massive explosion by which its structure and shape underwent massive changes. It is quite another thing to assert that it exploded *into being*. When something goes into something, it is moving from somewhere else. When I walk into my house, I am moving *out* of something else. Whence does something move when it moves into *being*? The only logical alternative is nonbeing. Does the statement mean that fifteen billion years ago the universe exploded from nonbeing into being? That’s certainly what the statement implies. If so we can hardly resist the inference that that which exploded, since it was not yet in being, was nonbeing, or nothing. This we call self-creation by another name.

This is so absurd that, upon reflection, it seems to be downright silly. It is so evidently contradictory and illogical that it must represent a straw-man argument. No sober scientist would really go so far as to suggest such a self-contradictory theory, would they?

Unfortunately they would and they do. This raises questions about the soberness of the scientists involved. But generally these are not silly people who make such silly statements. Far from it. They number some of the most well-credentialed

and erudite scholars in the world, who make a prophet out of Aristotle when he said that in the minds of the brightest men often resides the corner of a fool. In other words, brilliant people are capable of making the most foolish errors. That is understandable, given our frailties as mortals. What are not so understandable are the ardent attempts people make to justify such foolishness. The worst such attempt at justification is to justify nonsense by assailing reason itself. They attempt to give a reason for their irrationality.

BOHR'S GREAT TRUTH

Someone as noted as Niels Bohr took this route with great gusto. Bohr's famous dictum is "A great truth is a truth of which the contrary is also a truth." So confident was Bohr of this statement that he emblazoned his coat of arms with the Latin motto *Contraria sunt complementaria*.⁸ Bohr once argued that the two statements "There is a God" and "There is no God" are equally insightful propositions.⁹

Perhaps the two propositions are equally "insightful," but they cannot be equally true. Indeed they could only equal each other in insight value if we deem false insights equal in value to true insights.

What is dismissed here along with the law of noncontradiction is perhaps the strongest formal argument in logic, the argument of the impossibility of the contrary. The impossibility of the contrary is basically a simple restatement of the law of noncontradiction. The impossibility of the contrary means that if A is, non-A cannot also be at the same time and in the same relationship.

Bohr's dictum was not so much an act of arrogance as it was an act of desperation to justify the unjustifiable. When

scholars deny the law of noncontradiction, they do it selectively. That is, they do it when it suits them, when it is necessary to escape a logical trap. When logic snares us, the temptation is to retreat into denial. We deny the ensnarement by denying the trap that snagged us.

One final observation of the concept of self-creation. It is a concept that is analytically false. An analytically false statement is false by definition. To define a husband as an unmarried man or a triangle as a four-sided figure is to commit analytical falsehood. Analytically false statements are adjudged to be false not only because they are unintelligible but also because they are nonsense statements. They are not nonsense because they are unintelligible; they are unintelligible because they are nonsense. Empirical scientists may disparage philosophy, ontology, and epistemology, but they cannot escape them. Science involves the quest for knowledge. Any such quest, by necessity, involves some commitment to epistemology. The epistemology of irrationalism is fatal to all science because it makes knowledge of anything impossible. If a truth's contrary can also be true, no truth about anything can possibly be known.