n the autumn of 2017, Bengal, as usual, was abuzz with the seasonal cacophony of the pre-Durga Puja media blitzkrieg. There were advertisements pasted across streets and the media canvassed everything. One particular advertisement irked the born-again Rightwingers, who, in this province at least, seemed to have sprung from the woodwork. It concerned a leading salon chain headed by a Muslim entrepreneur. Its sweet, cheeky advertisement depicted the entourage of Durga and her wards making a quick visit to the said parlour to get a fashionable make-over before they headed to earth. The copy was apt, the illustration piquant and the effect comic and heartwarming. But Rightwing chest-thumping forced the company to quickly withdraw the advertisement and the owner to duly apologise before there was any physical harm done to his many properties spread across Bengal. Naturally, there was need to protest. I wrote a longish piece on an opinion-only digital platform citing several examples from Bengali popular culture of how the goddess and her children have, at least since the early 20th century, been portrayed in the regular or caricatured image of an average Bengali householder. A vacationing Durga, a Durga playing the guitar at a neighbourhood function, a Durga in jeans and top, a Durga at home sitting with a group of leisurely, reclining women - these are familiar manifestations of the so-called divine. Not to speak of the countless mutations to her form and figure in puja pandals and tableaux. In fact, there is hardly any memorable way in which the goddess Durga has been imagined

and domesticated every autumn. What I perhaps could not forcefully argue is that there is nothing unique about the manner in which the goddess Durga is domesticated in Bengal. This practice is widespread, and historically, was the most dominant way in which the divine had been understood, as humans proceeded from the paleolithic to the neolithic period. In other words, the divine, before the rise of Judaism and Christianity, had never been anything else but utterly human - in both form and function. This is the primary message of Reza Aslan's new book God: A Human History. In fact, Aslan's most startling claim in the book is that it is not agriculture which had stopped the hunter-gatherer 'paleoliths' in their tracks and forced them to find stasis around the site of their produce. It was the birth of religion as an organised set of practices and the building of large temple complexes like the Göbekli Tepe in Turkey which forced them to organise their nomadic character. Göbekli Tepe's antiquity, traceable back to a whopping 13,000 years, to the fag-end of the last Ice-Age, has only increased the historical life of pre-Semitic religions of the world. In other words, the sweeping practice of polytheism that included the Sumerians and their successors the Assyrians, Egyptians, Greeks and Indo-Europeans, and which the Christians had made pariah as Paganism, has a history of almost 10,000 years. This is five times the period of monotheism, that precedes

the Common Era by just 500 years, at

as a holy talisman. She is ubiquitous

and moulded, fabricated, formalised

A divine version of ourselves

God: A Human History

By Reza Aslan

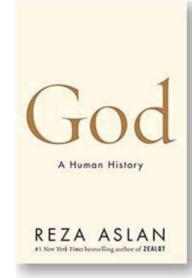
Bantam Press/ Penguin Random House India, 2017, 298 pp., Rs 699 (PB)

ISBN 978-0-930-7983-6

SAYANDEB CHOWDHURY

the time of the Babylonian conquest of Israel by Nebuchadnezzar II. In eastern religions, polytheism is not just widely and dominantly practiced but seems to be at ease with its pantheon of hundreds of gods — all having human traits and human weaknesses and corruptibility, just as it was till about 2500 years ago, everywhere in the known world.

Even if settling down for the sake of the practice of religion seems a radical claim, Aslan's ground is neither one asks why Jesus of Nazareth is fair, blonde and blue-eyed when he is otherwise from the hot, dry and inhospitable terrains of the Middle-east, with carpentry as his trade. As long as he resembled humans of an ideal form — most likely the Crete template, since devout early Christians were Greek-speaking and the four early Gospels were in Greek — he was to be accepted across the world regardless of the local preference for the colour



The divine, before the rise of Judaism and Christianity, had never been anything else but utterly human — in both form and function. This is the primary message of Reza Aslan's book God: A Human History. In fact, Aslan's most startling claim in the book is that it is not agriculture which had stopped the huntergatherer 'paleoliths' in their tracks and forced them to

find stasis around the site of their produce. It was the birth of religion as an organised set of practices and the building of large temple complexes like the Göbekli Tepe in Turkey which forced them to organise their life around a place and abdicate their nomadic character. For Aslan the question is not if the humans had first imagined and then devised the divine in the form of their own. The question is why? And why did it become necessary in the West to move towards monotheism as a radical break from the Assyrian, Egyptian and Hellenic traditions?

unknown nor unexpected. After all, it is not a new discovery that there is no form of the divine in the wide 'historical' period which looks unlike the human or has very effective and identifiable non-human traits. Even Christianity – the world's most populous monotheistic religion – had to appoint (or rather manufacture) a human to act as god's son on earth, with traits that are significantly and disturbingly removed from the site of origin of the 'messiah'. In fact, no

of skin and length and texture of hair. The last part of the observation is partially drawn from Aslan's last book Zealot: The Life and Times of the Jesus of Nazareth (Random House, 2013). There, he had made a riveting attempt at historicising the Christ figure, slowly and laboriously separating crumbs of historical fact from an avalanche of sources and scriptural texts that were configured for mythification. If not entirely, he was to a large extent successful. After reading Zealot, even

if one did not know who exactly the historical Jesus was, one certainly knew who he wasn't. And that is not a mean

Like in his last book, here too, Aslan deals with very significant historical questions. For him (as much as for us) the question is not if the humans had first imagined and then devised the divine in the form of their own. The question is why? And why did it become necessary in the global west to move towards monotheism as a radical break from the Assyrian, Egyptian and Hellenic traditions? This is a sort of inquiry that needs to be constantly substantiated with illustrations and archaeological findings from across belief-systems in ancient provinces. Like in Zealot, Aslan never falls short of that primary requirement. He keeps the historian's craft close to his chest. At the same time, he never lets his sweeping subject to be overwhelmed by the scholarship that already exists. For sure, Aslan is not the first scholar of religion and neither is he the most formidable. But he has a gift for storytelling, which manages to keep the narrative free from being constantly obstructed and belted by the need for historical substantiation. He neatly divides the book, almost in half, between the actual story of god on earth and the detailed notes and references. This way, one reads not a tome of dry historical inquiry but essentially the epic story of man (and woman) or at least the set of beliefs, customs and practices which were once a tool of self-reflection. It is through a long historical process of conquest, power and hegemony, that those same innocent systems of belief took a vile

To come back to the 'why' of it, Aslan's arguments move towards a convincing answer, even to the issue of monotheism and emergence of religion as a set of inviolable practices aimed at placating a powerful, conceited god. He writes:

When we organised ourselves in small, wandering packs of huntergatherers united in blood and kinship, we envisioned the world beyond ours to be a dreamlike version of our own, bursting with hordes of tame animals, shepherded by the Lord of Beasts for our spirit ancestors to stalk with ease. When we settled down in small villages and began growing our food instead of hunting for it, the Lord of Beasts surrendered to Mother Earth, and the celestial realm was reimagined as a place ruled by a host of fertility gods who maintained an eternal harvest. When those small villages expanded into independent city-states, each with its own tribal deity, in perpetual conflict with each other, the heavens made room for a pantheon of distinct martial deities, each a divine protector of its respective city back on earth. And when those citystates merged into massive empires ruled by all-powerful kings, the gods were rearranged into hierarchies reflecting the new political order on earth. (pp 101-102)

If we need any proof of how gods, otherwise projected with a set of superpowers, are in essence actually human, we need not go very far. We can just walk into the temple at Sabarimala in Kerala and be assured of it.

Then Shakespeare had Hamlet muse about "The undiscovered country from whose bourne no traveler returns", he could hardly have known that journeying four centuries after him, a certain Stephen Stephen Hawking's singular swansong

Brief Answers to the Big Questions

By Stephen Hawking

John Murray/Hachette India, 2018, 232 pp., Rs 650 (HB) ISBN 978-1-4736-9598-6

RANJIT NAIR

Hawking cheated death for over half a century. He had a premonition rumours that had been rife about the of things to come when he found Cambridge PhD student's proof that during his final year at Oxford that the universe originated in a singularity. He was "tremendously impressed", he was prone to falling and not being able to get up. The first doctor he consulted dismissively suggested that he says, by the lucid exposition of the argument that used the expanding he lay off the beer! Hawking's parents universe, Einstein's general relativity, a few reasonable assumptions and new were educated people. His father was a doctor specialising in tropical medicine, mathematical techniques devised by the Cambridge-educated mathematician who moved to the cathedral city of St Albans mid-century, where Hawking Roger Penrose, to prove that the eventually enrolled at St Albans school.

Hawking would defy his maxim.

Hawking's ashes were interred in

Westminster Abbey between the

graves of Isaac Newton and Charles

Darwin on 15th June this year. In

his final volume of popular science

essays, published posthumously, he

speaks to us about a wide range of

topics, offering his passionately-held

opinions on issues that go beyond the

area of his professional specialisation,

which means that he manages to vault

over not just one, but two bournes, an

achievement that is not easily replicable.

"I was never more than about halfway

up the class - it was a very bright

class - but my classmates gave me the

nickname Einstein, so presumably

they saw signs of something better",

he reminisces. His enthusiasm for the

big questions, such as the origin of the

universe was spurred by discussions

with a small band of fellow students.

When he was 14, Hawking says his

mathematics teacher Dikran Tahta

"opened my eyes to maths as the

The autobiographical forays enliven

Brief Answers to the Big Questions and

provide natural bridges to the rest of the

essays in the collection, which begins

with an unmarked chapter entitled

"Why we must ask the big questions"

with a charming picture of the scientist

as a frowning schoolboy. The collection

strings together essays from Hawking's

personal archive. It fell to the lot of his

daughter Lucy, who has co-authored

books for children with him and shares

his interest in communicating science

to the general public, to pilot the work

to completion some four months after

The book is front-loaded with two

pieces, beginning with a Foreword

by the actor Eddie Redmayne, who

won an Oscar for playing the role of

Hawking in the film The Theory of

Everything based on his wife Jane's

memoir Travelling to Infinity - My

Life with Stephen. Redmayne essayed

the character he portrayed was a living

scientist. He recalls that when he

met Hawking after having spent time

studying the character in the script,

he was "flustered" and at a loss for

words, and had commented that he

shared the zodiacal sign with Hawking.

This elicited the rejoinder, "I'm an

astronomer. Not an astrologer".

by Kip S. Thorne, who as a freshly

minted PhD from Princeton, attended

Hawking's lecture at a conference in

London in 1965, which confirmed

The other piece is "An Introduction"

Vintage Stephen.

Hawking's departure.

blueprint of the universe itself".

Oxford and Hawking says "I surprised myself by being successful" in securing a scholarship in natural sciences at the College. After Oxford, Hawking planned to go to Cambridge hoping to have Fred Hoyle supervise his PhD. Hawking had grown up believing in the eternal and unchanging 'steady-state' universe of which Hoyle was a leading proponent. Hoyle was not available and he was assigned Dennis

STEPHEN HAWKING

BRIEF ANSWERS
TO THE
BIG QUESTIONS In his final volume of popular science essays, published posthumously, Hawking speaks to us about a wide range of topics, offering his passionately-held opinions on issues that go beyond the area of his professional specialisation. Asking "Is there a God?" Hawking replies: "I use the word 'God'... like Einstein did, for the laws of nature, so knowing the mind of God

is knowing the laws of nature ... the mind of God will be known by the end of this century."

universe originated in a singularity some ten billion years ago. He notes that within a decade, Hawking and Penrose teamed up to further strengthen this proof as well as the one that showed that at the core of every black hole lurks a singularity. Thorne recounts his life-long friendship with of the pioneering contributions that Hawking made, against all odds. Thorne shared the 2017 Nobel Prize in Physics with Rainer Weiss and Barry C. Barrish for building the LIGO detector and detecting gravitational waves from colliding black holes 1.3 billion light years from Earth.

In a free-floating chapter entitled "Why we must ask the big questions" Hawking provides a capsule account of his life and career. His father encouraged him to pursue science and go to Oxford or Cambridge. His father had been to University College

Sciama as his supervisor. Einstein's general theory of relativity lay dormant for nearly half a century until Roger Penrose inaugurated a new era with the use of global techniques to prove the existence of black hole singularities, side-stepping conventional methods which proved to be notoriously barren.

The ten Big Questions addresse by Hawking in the book are as deep as they are wide. The fifth chapter asks "What is inside a black hole?" Hawking traces the concept of a black hole to the 'dark stars' hypothesised in 1783 CE by an obscure 'Cambridge man' named John Michell.(Michell is described as a polymath and cleric, "a little short Man, of a black Complexion, and fat.") Michell reasoned that the gravitational force of a star vastly more massive than the Sun would be so powerful that the velocity with which anything could escape might exceed the speed of light, making it invisible. The prediction

relied on the theory of gravitation of the "incomparable" Isaac Newton, the second occupant of the Lucasian Chair of Mathematics at Cambridge University that Hawking came to occupy as the 17th, 310 years later.

The idea of gravitational collapse was greeted with skepticism or worse, derision in 20th-century astrophysics. Cosmology evolved into a branch of theoretical physics after Albert Einstein formulated the general theory of relativity in 1915, ten years after the special theory. Applied to the universe, his equations showed that it had to expand, and to suppress the expansion he introduced the cosmological constant, which he later called his "greatest blunder". The American astronomer Edwin Hubble discovered in 1929 that the universe was indeed expanding.

Hawking publicly pronounced Hoyle wrong after a sneak peek at the manuscript of his paper with his student Jayant Narlikar. This has uncanny parallels with the spat that Arthur Eddington had with Subrahmanyan Chandrasekhar three decades earlier. Chandrasekhar proved that a star with a mass exceeding 1.4 solar masses would explode as a supernova, leaving its core to contract irreversibly to a point of infinite density i.e. a singularity. Eddington was dismissive, saying, "I think there should be a law of Nature to prevent a star from behaving in this absurd way!"

In both cases, the older men were proved wrong. Age seldom confers authority in science. The properties of black holes were studied extensively by Hawking and Penrose, Brandon Carter, James Bardeen and Bekenstein among others. Hawking noted independently that when two black holes merge, the area of the resulting black hole exceeded the sum of the areas of the two, which was eerily reminiscent of entropy. Hawking showed that the entropy was real and derived the equation relating it to the area, which is engraved on his memorial slab in Westminster Abbey.

Entropy implies temperature, which implies radiation. Hawking sought an explanation in the creation of particle-antiparticle pairs in the strong gravitational field of a black hole. One member of a pair could fall into the black hole while the other escapes as radiation. Hawking found in 1973 that this radiation is thermal, which meant that information is lost, contravening quantum theory. He proclaimed that not only did God play dice; he also threw it where nobody could look. Quantum theorists pushed back, calling it the black hole information paradox. Hawking turned to string theory for an explanation. According to string theory, elementary particles are modes of vibration of tiny one-dimensional strings whose length is 1 over a billion trillion trillion centimetre.

Asking "Is there a God?" Hawking replies: I use the word 'God'... like Einstein did, for the laws of nature, so knowing the mind of God is knowing the laws of nature... the mind of God will be known by the end of this century.

In 2001 I accepted his offer of a 50:50 bet that physics would become 'redundant' in 20 years, during our meeting with President KR Narayanan. His 2002 Dirac lecture "Gödel and the End of Physics" cites Gödel's incompleteness theorem to concede the bet with a generic argument. Sadly, I cannot ask him any more for his reconciliation.

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