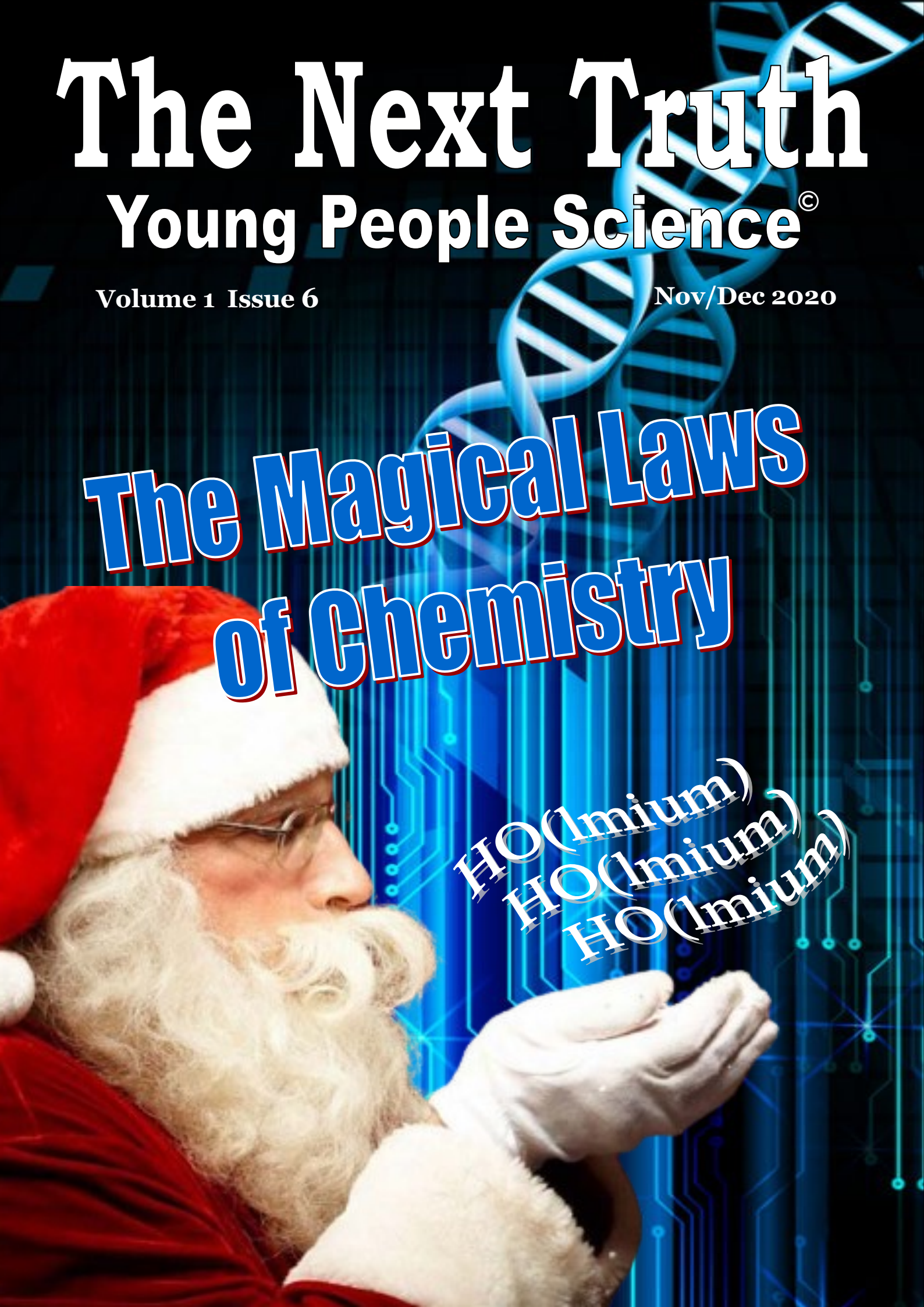
The Next Truth

Young People Science©

Volume 1 Issue 6 Nov/Dec 2020

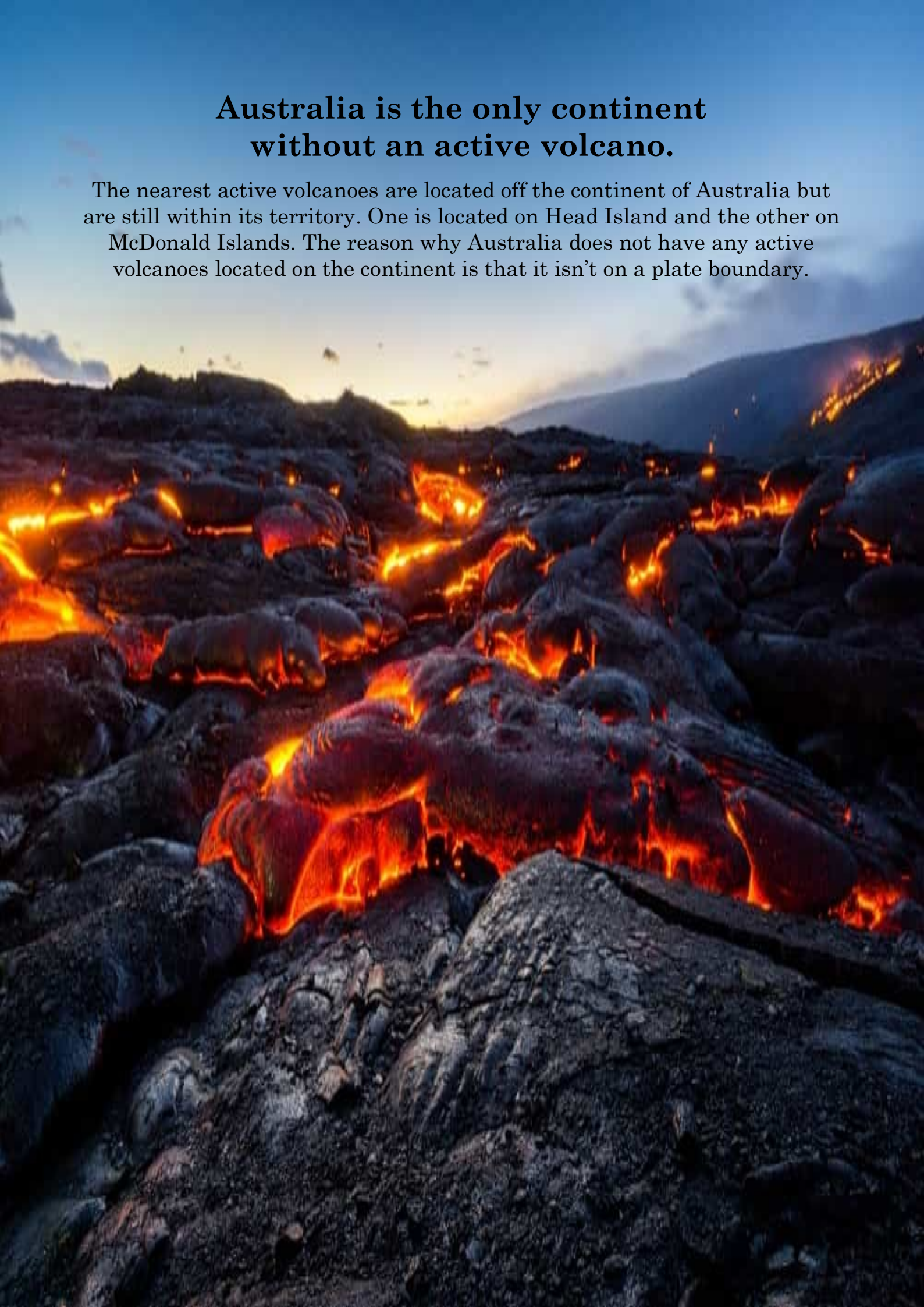
The Magical Laws of Chemistry



In This Edition

Australia is the only continent without an active volcano.

The nearest active volcanoes are located off the continent of Australia but are still within its territory. One is located on Head Island and the other on McDonald Islands. The reason why Australia does not have any active volcanoes located on the continent is that it isn't on a plate boundary.



Death Finds a Way or Mud
Chapter 2, “Juan”

By Prof. William John Murray, www.warwick.ac.uk

Eleanor watched the Spanish mountains, wrapped in cloud, as the Iberia jet descended sharply towards Santander airport. She had a twisted feeling in her guts that had nothing to do with the turbulence of the mountains.

This was only her second flight by herself, and the connection in Madrid had not gone well, so her anxiety levels had been climbing all day. But now she was practically here, ready to make the formal identification of the body.

The phone call had come only that morning, and the day had been such a whirlwind of activity and arrangements that she had not even begun to digest it. None of it felt real to her, but there was one thing she knew: she was dreading looking into his face. What would he look like? Presumably his skin was pale and white? Somewhere she had heard that in death the eyeballs roll upwards. Would his eyes just be blank white too? Or was that just an urban myth? She shook herself and stared out of the window, trying to focus on the red roofs and green, pampas-grass covered hills as they approached the sea.

The plane touched down with a bump and taxied to a stop outside the terminal. She was glad of her business class ticket as she pulled herself to her feet and walked out to the steps, scarcely noticing the ‘Buenos Dias’ of the flight crew.

She was one of the first to leave the plane, and headed briskly into the small terminal building, her bag rolling behind her. The policeman was waiting for her as she stepped out of the luggage hall. His dark uniform made him stand out in the small crowd. But the authority that surrounds police anywhere meant that somehow people gave him just a little more space, and so Elly could not fail to see him. “Señorita Beedle? ” She nodded, and made her way towards him. “Thank you for coming so quickly on this difficult day. We have business tomorrow morning, but tonight I am here to take you to your hotel.”

His English was clear, but his pronunciation reflected his nationality. “Thank you... what is your name?” “Juan; Juan Martinez”. She suddenly realised he was little older than her, and that he was standing closer to her than was really necessary. “I am delighted to be able to help you. In the morning I will be your driver as well.” “Thank you Juan. I appreciate everything the Spanish police is doing.” They made their way out of the terminal building, and the warm evening air came as a surprise, reminding her that se was no longer in England.

The police-car was tucked away to the side of the terminal building, on a little patch of concrete all by itself. Its solitude reminded her of her own. It was up to her. She was the family now. Dad was gone, mom in England. She marched purposely towards the car.

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To be continued in the next edition with; Chapter 3, "Lola"

Q&A

Did you know... The 1939 novel Gadsby is the longest book ever published that doesn't contain the letter 'e.'

Back in 1939, American author Ernest Vincent Wright published Gadsby, a 50,000-word novel that doesn't use the letter 'e' once. What's more, it's not the only novel that ditched the letter.

Author Georges Perec also wrote the French-language book La Disparition without the letter 'e' in 1969. That's even more astounding when you consider that 'e' is the most commonly used letter in the English (and French!) language.

Did you know... Grapes light on fire in the microwave.

Back in 2011, a physicist at the University of Sydney went viral after he placed a grape in the microwave and filmed the fiery aftermath. And oddly enough, scientists couldn't explain the phenomenon until quite recently.

A March 2019 study published in Proceedings of the National Academy of Sciences reported that the fruity fireball occurs as a result of the loose electrons and ions that cluster to form plasma when grapes get hot.

Did you know... The longest place name in the world is 85 letters long.

Unfortunately, this is one of the facts you probably can't repeat to your friends—and that's because it's nearly impossible to pronounce.

Taumatawhakatangi-hangakoauauotamatea-turipukakapikimaunga-horonukupokaiwhen-uakitanatahu is in New Zealand and is 85 letters long. And when it comes to other super long place names, it's followed by *Llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogoch* in Wales, *Chargoggagoggmanchauggagoggchaubunagungamaugg* in the U.S., *Tweebuffelsmeteenskootmorsdoodgeskietfontein* in South Africa, and *Azpilicuetagaraycosaroyarenberecolarre* in Spain.

Contributors

Suren Manvelyan (Yerevan, Armenia)

Suren started to photograph when he was sixteen and became a professional photographer in 2006. Suren received his PhD in Theoretical Physics from the Yerevan State University in 2001 where his research focused on Quantum Chaos. He received the President Award of the Republic of Armenia next year for his research work in the field of quantum technologies. Suren's photos have been published in numerous magazines and newspapers in Armenia and worldwide. His photographic interests span from Macro to Portraits, Creative photo projects, Landscape, and much more. www.surenmanvelyan.com

Rokas Laurinavičius (BoredPanda Staff)

Rokas is a writer at Bored Panda with a BA in Communication. After working for a sculptor, he fell in love with visual storytelling and enjoys covering everything from TV shows to photography. Throughout his years in BP, over 235 million people have read the posts he's written, which is probably more than he could count to. www.boredpanda.com

Justinas Keturka (BoredPanda Staff)

Justinas is a photo editor at Bored Panda. He was fascinated with visual arts and arts in general for as long as he can remember. He was obsessed with playing and making music in his teens. After finishing high school, he took a gap year to work odd jobs and try to figure out what he wanted to do next. Finally, around 2016, he started learning how to use Photoshop and hasn't stopped since. He started working as a visual advertisement producer in 2017 and worked there for almost two years. www.boredpanda.com

Helen Fisher (United States)

Helen Fisher, PhD Biological Anthropologist, is a Senior Research Fellow, The Kinsey Institute, Chief Scientific Advisor to the Internet dating site Match.com. She has conducted extensive research and written six books on the evolution and future of human sex, love, marriage, gender differences in the brain and how your personality style shapes who you are and who you love. She is currently using her knowledge of brain chemistry to discuss the neuroscience of business leadership and innovation. www.helenfisher.com

William John Murray (UK)

Physics prof. and Ph.D. W. J. Murray is an Edinburgh-born researcher. His involvement at CERN includes understanding the interactions and properties of the Higgs boson using the ATLAS detector at the LHC (CERN). He is searching for new physics, especially dark matter. Prof. Murray was the ATLAS Higgs convener from 2009 until 2011, physics coordinator from 2012 -2014, and was right in the center of the Higgs discovery in July 2012. Prof. Murray was a researcher at the Rutherford Lab, in Oxfordshire and in 2013 became a professor at Warwick University. http://delphiwww.cern.ch/

Srini Pillay (Greater Boston Area)

Dr. Srini Pillay is a world leading neuroscientist and assistant Professor of Psychiatry (Part-Time) at Harvard Medical School. He is known for com-bining "head and heart" (figuratively and literally) in an approach to personal develop-ment and goal mastery that blends science, spirituality, and horns-grabbing *joie de vivre* to combat the stresses faced by ambitious and high-achieving people in academia, business, and life. **http://drsrinipillay.com/meet-srini/**

Tony Damian (Central Florida)

As e.g. a Master/Teacher of Usui Shiki Ryoho Traditional and Angelic Reiki, Tony has experience in Ancient Tribal and Indigenous healing practices since 1985. His career history spans many different fields until that came to abrupt end in 1982 with a freak, near fatal accident what forced Tony to became his own health-care provider. **www.thepowerofweee.com**

Simon Cotton (Birmingham, UK)

Dr. Cotton has taught for some 30 years in state and independent secondary schools. He has written 7 books on molecular chemistry, three as sole author. His "Soundbite Molecules" column regularly appeared in Education in Chemis-try magazine from September 1996, reaching every secondary school in the UK, and has been a major contributor to the Royal Society of Chemistry's "Chemistry in its element – Interactive Periodic Table" and "Chemistry in its element – Compound" podcasts. In 2005, Dr. Cotton shared the Royal Society of Chemistry's Schools Education Award. **www.birmingham.ac.uk**

Maria Anna van Driel (Germany)

Maria Anna is the owner and founder of The Next Truth magazine, an in-vestigative science journalist, columnist, foreign correspondent, ghost writer. She is the host of the TNT-podcasts. Her interest includes among others My-thology, Medieval and (pre) Egyptian Symbolism, Quantum-, Optical-, Partic-le-, and Astroparticle Physics. Maria Anna finds always the time to write new articles while having a nice chat with her (future) contributors.
www.nexttruth.com

Physics Word Search

F Y I F T Z I J E I T U X J E G R U A Q
Z W Z F Y B Z M K K L Q W Q G V H K Y B
D T K H R T T Y O B F R I C T I O N D E
E E O Z E Y R L F M A T O M Q G W C V K
R F E S T V E E V M E L E C T R O N F X
N H S D T Y H L A R V N B M J D K Z P J
E J M T A E M E C P K O T H N U L R N O
Y B Y A M Y S C U R P F L U H K M X M S
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T F I C L R T R M T B Y X T U C E C T E
S X C E I K E I T O A L S W L T R I E V
R X O L F P N C D N P E Y Y U O V N Y A
U Y L E G F G I D V I C H A F A Y I X W
I A E R N B A T U L Q G Y V R A T E Z Q
H J V A E I M Y F W A G R G Z M V T Q I
Y G G T U Z L L N E W T O N N S Q S F A
R D E I T A B Z A Q B M E O N S V N H V
A Q Y O R X Y P I D E L Q E O A C I G U
M G N N O E J Z M Y Y R H A K M I E I H
Z X Y Q N P D I C U R R E N T M A I V E

friction
momentum
atom
wave
electron

magnetism
Newton
vacuum
gravity
hertz

electricity
velocity
Einstein
matter
neutron

acceleration
forces
proton
current
mass

Armenian Photographer Captures the Uniqueness of Animal Eyes

By Rokas Laurinavičius and Justinas Keturka, www.boredpanda.com

Few people get a chance to photograph animals such as hippos, hyenas, or crocodiles. Suren Manvelyan, however, has managed to get so close to them, he even captured insanely detailed close-ups of their eyes. Some of these macro shots look like landscapes of distant yet-to-be-discovered planets while others remind some sort of a portal to another dimension. But they all prove that the eyes really are the windows to the soul; analyzing the images you can't help but experience profound sensations, as if you're uncovering deeply personal secrets.

"I began thinking about this series after I completed a similar one about the human eye," Manvelyan told Bored Panda. "After the first project, I had really improved in shooting eyes in any conditions, and eventually settled on the idea to photograph animal eyes."

Manvelyan captured animals pretty much everywhere he could find them, from his backyard to zoos, oceanariums, and so on. "Sometimes, people even contact me, asking to shoot the eyes of their pets."

"The eyes of every animal is the result of it adapting to its living conditions. That's the reason why there are so many eye types. Water animals have completely different eyes than those living on earth, too. I think this is what makes the animal eye series so interesting to the viewer."

Manvelyan also started a game with his online followers. When he would upload a new photo, he'd ask his Facebook and Instagram fans to guess what species the eye belongs to. "Interestingly, it can become quite a tough challenge." Being so close to animals, however, is a challenge of its own.

Porcupine Fish; a tropical marine fish that has a parrot-like beak and is covered with sharp spines. It inflates itself like a balloon when threatened.

Photo credit: Suren Manvelyan
www.surenmanvelyan.com

For example, Manvelyan spent an hour with a llama in her cage, trying to make her familiar with him and to allow him to get within the required distance for the right shot. "I would like to stress that all animals included in the series were alive and no animal was hurt in any way during shoots," the photographer added.

He wouldn't disclose any technical aspects of these shoots as he spent a lot of time and effort perfecting the setup for this particular series, but said the most interesting part of it all was realizing that nearly all people have the same eye structure. "It doesn't matter if you are young or old, white or black."

■ ■ ■

SURENMANVELYAN

Suren Manvelyan started to photograph when he was sixteen and became a professional photographer in 2006. His latest popular series of close ups of a human eye - entitled "Your beautiful eyes," together with a similar series on "Animal eyes." **www.surenmanvelyan.com**

The Alaskan Malamute is a large breed of domestic dog (Canis lupus familiaris) originally bred for their strength and endurance to haul heavy freight as a sled dog and hound. They are similar to other arctic, husky, and spitz breeds such as the Greenland Dog, Canadian Eskimo Dog, the Siberian Husky, and the Samoyed.

Photo credit: **Suren Manvelyan**

The Long-Eared Owl (Asio otus), also known as the northern long-eared owl or, more informally, as the lesser horned owl or cat owl, is a medium-sized species of owl with an extensive breeding range. The scientific name is from Latin. The genus name Asio is a type of eared owl, and otus also refers to a small, eared owl. The species breeds in many areas through Europe and the Palearctic, as well as in North America.

Photo credit: **Suren Manvelyan**

The Siberian Husky is a medium-sized working dog breed. The breed belongs to the Spitz genetic family. It is recognizable by its thickly furred double coat, erect triangular ears, and distinctive markings, and is smaller than a very similar-looking dog, the Alaskan Malamute. Siberian Huskies originated in Northeast Asia where they are bred by the Chukchi people for sled-pulling, guarding, and companionship.

Photo credit: **Suren Manvelyan**

The Horse is one of two extant subspecies of Equus ferus. It is an odd-toed ungulate mammal belonging to the taxonomic family Equidae. The horse has evolved over the past 45 to 55 million years from a small multi-toed creature, Eohippus, into the large, single-toed animal of today. Humans began domesticating horses around 4000 BC, and their domestication is believed to have been widespread by 3000 BC.

Photo credit: **Suren Manvelyan**

Rockfish are an amazingly diverse group of fish: scientists currently know of 102 species of rockfish with more than 30 species found in the Gulf of Alaska. Rockfish occupy nearly every type of marine habitat including shallow intertidal areas, deep-sea trenches, and broad mud flats – not just in rocky habitat as their name implies. Ranging in color from dull gray to vibrant orange and red, rockfish are as pleasing to the eye as they are to the taste buds.

Photo credit: **Suren Manvelyan**

The Blue-and-Yellow Macaw (Ara ararauna), also known as the blue-and-gold macaw, is a large South American parrot with mostly blue top parts and light orange underparts, with gradient hues of green on top of its head. It is a member of the large group of neotropical parrots known as macaws. It inhabits forest (especially varzea), woodland and savannah of tropical South America. They are popular in aviculture because of their striking color, ability to talk, ready availability in the marketplace, and close bonding to humans.

Photo credit: **Suren Manvelyan**

Photo by Hayk Manvelyan

Born in 1976, Suren started to photograph when he was sixteen and became a professional photographer in 2006. His photographic interests span from Macro to Portraits, Creative photo projects, Landscape, and much more. Suren's photos have been published in numerous magazines and newspapers in Armenia and worldwide.

His latest popular series of close ups of a human eye – entitled "Your beautiful eyes," together with a similar series on "Animal eyes," have had millions of views on the Web. They were published by National Geographic, Yahoo!, Die Zeit, The Sun, Daily Mail, The Independent, Telegraph, La Republica, Liberation, Guardian, Wired, Huffington Post, Wedemain, The Shortlist, DT Magazine, MAXIM, and many others. The photos were also used by BBC Spain, BBC Brasil, WNYC, Gizmondo and many others.

In parallel to photography, for the past ten years Suren has also enjoyed teaching physics, mathematics, projective geometry and astronomy at the Yerevan Waldorf School. From 1997 to 2011 he served as a scientific researcher at the Institute for Physical Research of National Academy of Sciences.

Suren received his PhD in Theoretical Physics from the Yerevan State University in 2001 where his research focused on Quantum Chaos. He received the President Award of the Republic of Armenia next year for his research work in the field of quantum technologies. Suren plays on five musical instruments the guitar, cello, piano, block flute, and lyre.

Website: **www.surenmanvelyan.com**

What do you mean by evolution?

By Maria Anna van Driel, www.nexttruth.com

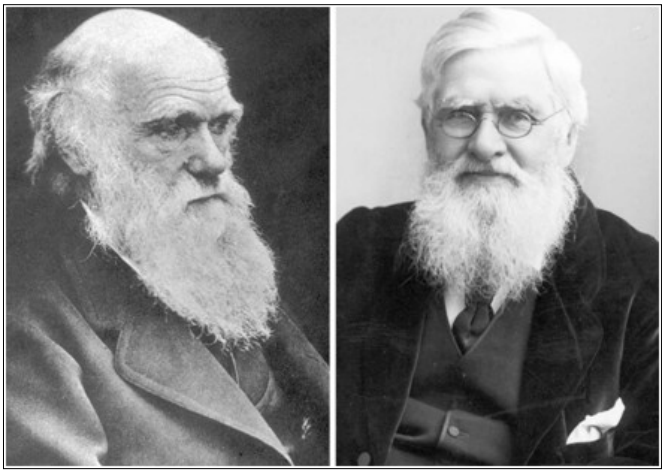
We tend to think that evolution is a smooth line of changes in the characteristics of a species over several generations and relies on the process of natural selection. This, by the majority, accepted theory of an almost vivid and detailed description of human ascent from a tiny, one-celled monad is so convincing that one could almost believe science has seen the microscopic amoeba turn into a man with their own eyes. But does the theory of evolution merit a fanatical support, which would silence all opposing ideas?

Within every human being are 46 chromosomes containing an estimated 100,000 genes, each one of which is able to affect in some way the size, color, texture, or quality of the individual. The assumption is that these genes, which provide the inherited characteristics we get from our ancestors, occasionally become affected by unusual pairing, chemical damage, or other influences, causing them to produce an unusual change (mutation) in one of the offspring. I wonder if the 2 billion-year-old nuclear reactor in Gabon, West Africa, called the Oklo fossil reactors, could have had any influence on some of Mother Nature's creations and started a new line, or lines, of species as they first fired themselves up.

However, scientists like Darwin, conceded that most mutants are recessive and degenerative; therefore, they would actually be eliminated by natural selection rather than effect any significant improvement in the organism.

The theory of evolution on the other hand is based on the idea that all species are related and by natural selection, first formulated in Darwin's book "On the Origin of Species" in 1859, and speaks of a process by which organisms change over time as a result of changes in heritable physical or behavioral traits.

In biology, evolution is the change in the characteristics of a species over several generations and relies on the process of natural selection. Natural selection can change a species in small ways, causing a population to change color or size over the course of several generations.



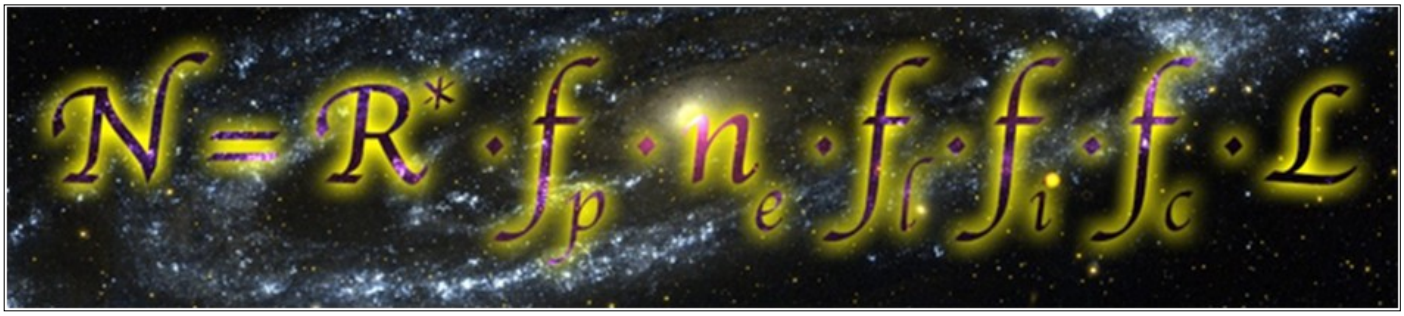
(Left) Charles Robert Darwin; a naturalist and biologist, known for his theory of evolution and the process of natural selection. (12 Feb. 1809 - 19 April, 1882)

(Right) Alfred Russel Wallace: a British naturalist, explorer, geographer, anthropologist, and biologist (8 Jan. 1823 – 7 Nov. 1913)

This is called "microevolution" but natural selection is capable of much more. Given enough time and enough accumulated changes, natural selection can create entirely new species. It can turn dinosaurs into birds, amphibious mammals into whales and the ancestors of apes into humans. Indeed, understanding evolution is important and helps us solve biological problems that impact our lives.

But leaving aside the exquisite complexity of biologically evolved organisms, it does seem to be true that the Earth creates less complexity than its human inhabitants and should evolution, as it is known by many, be a ridiculous improbability. How does the evolutionist explain the existence of that first one-celled animal from which all life forms supposedly evolved?

For many years the medieval idea of spontaneous generation was the accepted explanation what is supposing the production of living organisms from non-living matter, as inferred from the apparent appearance of life in some supposedly sterile environments. According to Webster, spontaneous generation is "the generation of living from nonliving matter from the belief that ›››



organisms found in putrid organic matter arose spontaneously from it." Simply stated, this means that under the proper conditions of temperature, time, place, etc., decaying matter simply turns into organic life.

The first serious attack on the idea of spontaneous generation was made in 1668 by Francesco Redi, an Italian physician and poet. Nice try Redi but a waste of time because this simplistic idea kept dominating scientific thinking until, in 1846, Louis Pasteur completely shattered the theory by his experiments and exposed the whole concept as utter foolishness.

Many scientists saw Redi's "deathblow" to this theory of spontaneous generation by proving by experiments that life comes only from previous life, as a perfect window of opportunity to explore the origin of the human species further.

Over time, Charles Darwin became almost universally thought of as the father of evolution but it was a British naturalist, explorer, geographer, anthropologist, and biologist who had written the revolutionary idea of evolution by natural selection entirely independently of Charles Darwin. Although the theory what was proposed by Charles Darwin in "On the Origin of Species" in 1859, Alfred Russel Wallace should be as famous as Charles Darwin for discovering that species "evolve" but his name became overshadowed by Darwin's.

Alfred Russel Wallace played an important, even pivotal, role in discovering and developing the theory of natural selection.

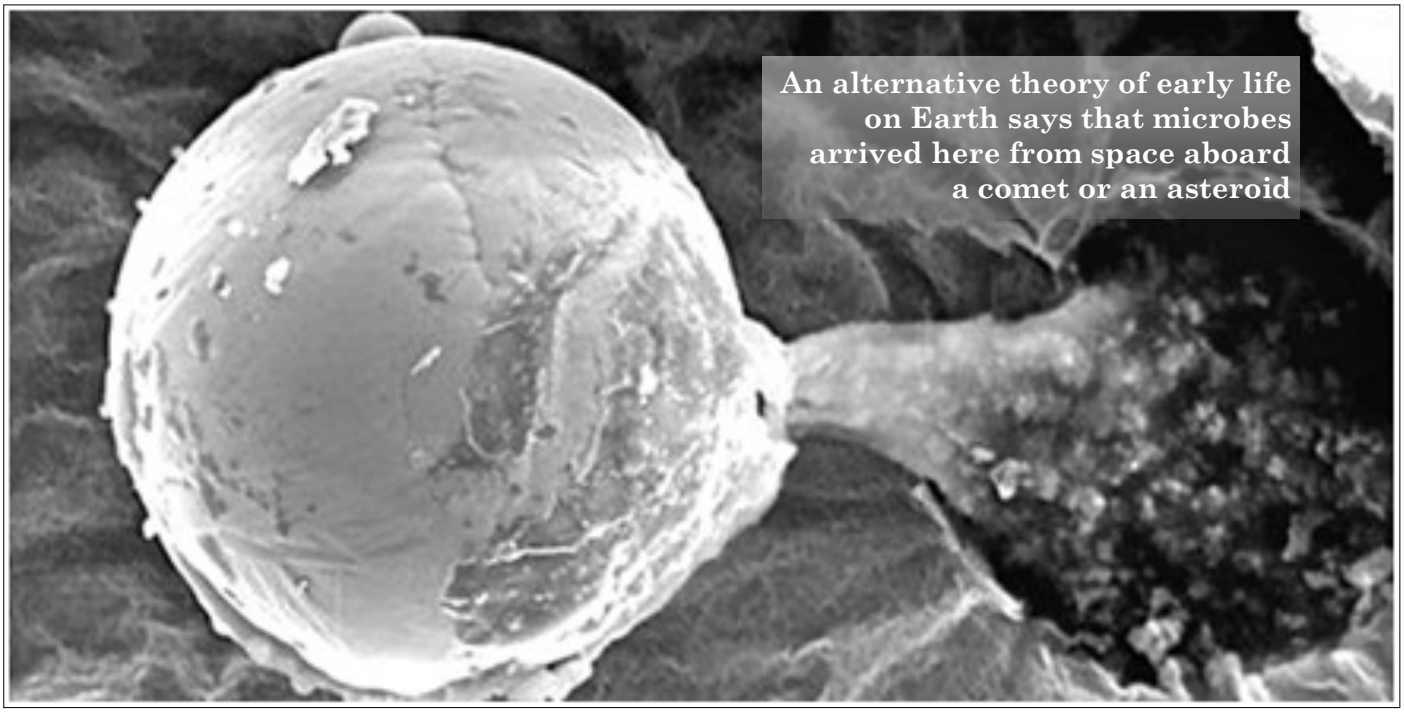
Wallace, unlike Darwin, took one step further outside the box of, for that period in time, accepted science by saying that the human soul is not the product of evolution. Still, let us not only judge Alfred Wallace by the impossible standard of competing with Darwinian immortality.

Judged on his own merits, he had an impressive career and left a substantial legacy. Most problematic for scientists like Darwin was Wallace's belief that while this natural experimentation shaped the body – there was something divine about the mind, the soul. Such spiritualism was too loopy for rationalists. But Wallace integrated his radical politics, deep spirituality, bold ingenuity, and admirable nobility. So, in the summer of 1865 Wallace began investigating spiritualism, possibly at the urging of his older sister Fanny Sims, who had been involved with it for some time.

After reviewing the literature on the topic and attempting to test the phenomena he witnessed at séances and came to accept that the belief was connected to a natural reality. For the rest of his life, he remained convinced that at least some séance phenomena were genuine, no matter how many accusations of fraud sceptics made or how much evidence of trickery was produced. And even these two gentlemen did not agree on some points in their search for the origin of the human species, the two opponents had a point. Evolution was subversive. On November 7, 1913, Wallace died at the age of 90.

155 years after the publication of the theory of evolution, science picked it up again in 2013/14. A group of scientists came together in a lab and used a powerful laser to re-create what might have been the original spark of life on Earth.

They zapped clay and a chemical soup with the laser to simulate the energy of a speeding asteroid smashing into the planet. They ended up creating what can be considered crucial pieces of the building blocks of life. Unfortunately, their findings did not entirely prove that this is how life started on Earth about 4 billion years ago but the experiment does bolster the long-held theory in evolution. ›››



An alternative theory of early life on Earth says that microbes arrived here from space aboard a comet or an asteroid

May I suggest to you a theory what speaks of an evolution that has the prospect of being rejected with the same speed as I am writing it?

Imagine a, slightly different to ours, solar system just beyond the borders of our own universe. This solar-system has a bright star what provides the required heat for subatomic particles to emerge which in turn create the basics for atoms after they bound. Also, planets, moons and even black holes can be found in this, by us, unseen solar-system containing to us strange life forms. Let us also imagine that the border of our universe is not a straight line which science can calculate but is presenting itself as a wobbly and moving X -point…better known as a wormhole or EPR.

This alien solar-system swirling in a neighborly universe contains the same basic building-blocks as can be found in our universe but are slightly different in, for instance, their spin and energy charge and/or density. All these extraterrestrial subatomic particles are being now pulled towards the mouth of a black hole and pressed into the narrow tunnel of this wormhole behind the black hole what is creating a tremendous heat. Hum, think of 200 human beings who all want to exit, or enter, a room at the same time but this room has only one entry and it is not bigger then 2 meters wide. This large crowd is using all kinds of maneuvers as it tries to squeeze itself through this narrow entrance in order to enter, or exit, the room what is creating friction, chaos and aggression which in turn create heat.

By means of the friction, in this theory occurs by the spin of the particles when they meet instead of collide, a strange kind of heat is created and when a particle is more aggressive (electrical charged) then its fellow particle, it could produce a kind of sequence in uncountable little illuminated explosions (EM-Photons?). Keeping in mind that this is still a hypothetical proposition, this inaudible explosion can be a plausible answer to what we see happening on the other side of the wormhole (white hole) and gave this galactic event the name Red –Shift or maybe even… the Big Bang.

Now like those 200 screaming and yelling human beings trying to squeeze themselves through that narrow doorway, subatomic particles possessing different spins, speed, weight, are acting in a similar manner when putting together in a closed jar. Unscrew the lid and… BOOM! The only question in this event is; what caused the particles to spin in the first place? The friction…the explosion of this particle cocktail…is tachyon created by the spin of the known particles? Or did life sprang up spontaneously from no previous life and thus contradicts with the basic law of nature that forms the foundation of the entire theory? Is there truly a, yet unknown to science, spooky particle what inhabits our universe having a tremendous impact on our evolution?

Are we ourselves this alien life form we so desperately trying to contact?

■ ■ ■

Q&A

Did you know... Goosebumps are meant to ward off predators.

Why do we get goosebumps? In this physiological reaction, small muscles attached to individual body hairs contract, which leads the hair to stand on end. We inherited this ability from our ancestors in part as a way for our (then) coat of body hair to capture air beneath it and in that way retain heat. But, as George A. Bubenik, a physiologist and professor of zoology at the University of Guelph in Ontario, Canada, explained to Scientific American, it also caused our ancestors to appear bigger than they were, helping to ward off predators when they were frightened or on the defense. With modern humans having less body hair, goosebumps no longer cause us to look that much more intimidating.

For more pieces of trivia to impress your friends, here are 50 Facts So Strange You Won't Believe They're True. **www.bestlifeonline.com**

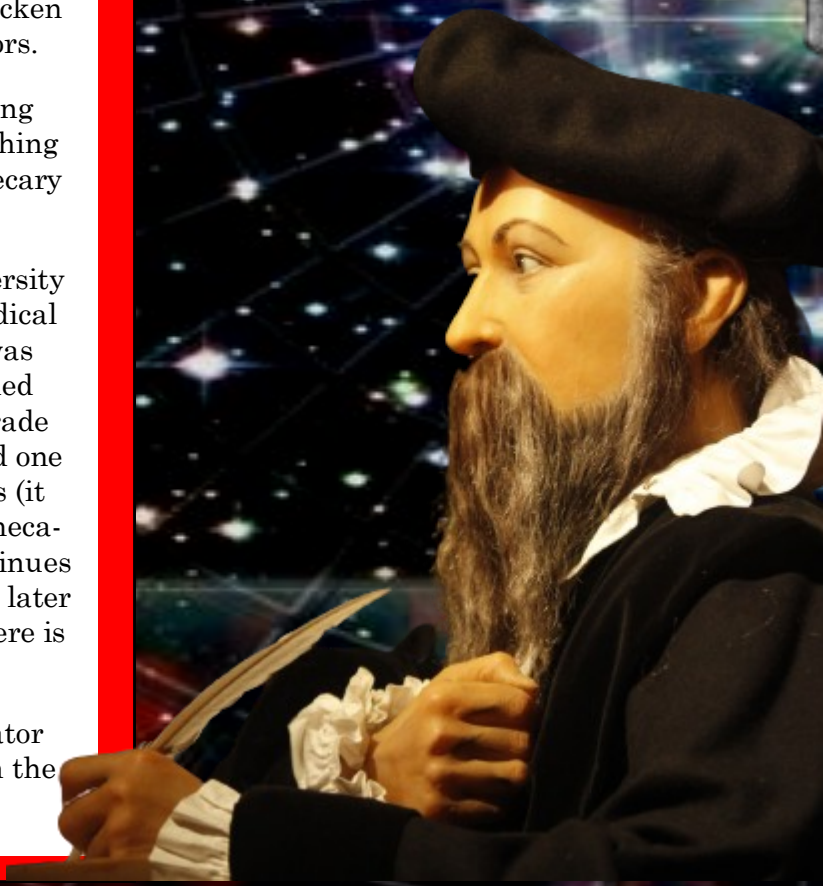
Did you know... Nostradamus was expelled from medical school?

Nostradamus enrolled in the University of Avignon in 1519 at the age of 15, but was forced to leave a year later when the town was stricken by plague and the university closed its doors.

He subsequently spent eight years traveling throughout France, Italy and Spain researching herbal remedies while working as an apothecary and helping victims of the plague.

In 1529, Nostradamus enrolled at the University of Montpellier (one of the world's oldest medical institutions still in operation today) but was expelled shortly after the university learned that he had worked as an apothecary—a trade believed to be inferior to that of a doctor and one expressly banned by university regulations (it was not until 1572 that the College of Apothecaries was founded at Montpellier). There continues to be some debate as to whether he returned later to complete his medical degree, although there is no evidence to prove that he did.

The expulsion document signed by procurator Guillaume Rondelet, however, still exists in the faculty library.



Did you know… Spider webs were used asbandages in ancient times.

In ancient Greece and Rome, doctors used spider webs to make bandages for their patients. Spider webs supposedly have natural antiseptic and anti-fungal properties, which can help keep wounds clean and prevent infection.

It's also said that spider webs are rich in vitamin K, which helps promote clotting.

So, next time you're out of Band-Aids, just head to your attic and grab some "webicillin."

Did you know… Alchemy isn't just a fictional subject taught at Harry Potter's Hogwarts School of Witchcraft and Wizardry.

In Europe and beyond it was a serious practice, combining scientific methods, philosophy, and occult spiritualism. Alchemists really believed they could gain transformative power over the elements of nature, and they dedicated their lives to the pursuit.

Medieval alchemy was dogged by controversy from the beginning. Though there were arguments about alchemy before, around 1200 AD, an English edition of Aristotle's Meteors was published in the same volume as an Arabic work denouncing alchemy. Many readers at the time mistakenly assumed that Aristotle was the author of both, and, not wishing to defy the "Father of Western Philosophy," they were quick to denounce alchemy too.

41 facts which shed some light on the shadowy world of alchemy, **www.factinate.com**

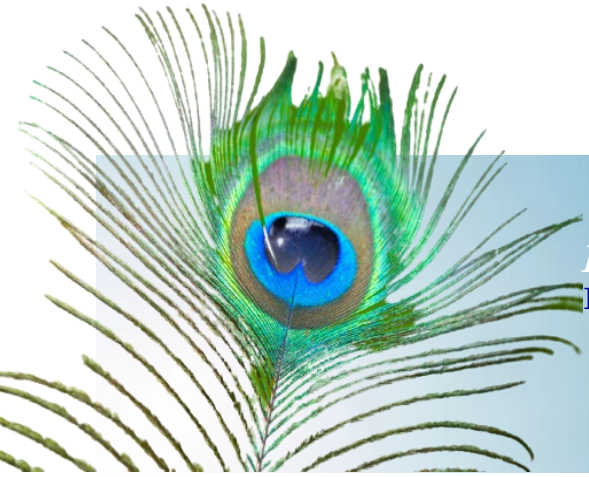
Q&A

Did you know... Attila the Hun died horribly (and mysteriously) on his wedding night.

Though gruesome, Attila's death was not the fate you might have predicted for a great warrior and military leader. Even while pursuing his claim on Honoria, he decided to take yet another wife, a beautiful young woman named Ildico. They married in 453, just as Attila was preparing another attack on the Eastern Roman Empire and its new emperor, Marcian. During the wedding at Attila's palace, the groom feasted and drank late into the night. The next morning, after the king failed to appear, his guards broke down the door of the bridal chamber and found Attila dead, with a weeping, hysterical Ildico at his bedside. No wound could be found, and it appeared that Attila had suffered a bad nosebleed while lying in a stupor and choked to death on his own blood. Some suggested that Ildico played a part in his death, or that he fell victim to a conspiracy engineered by Marcian; others dismissed it as a freak accident, or a cautionary tale about the dangers of binge drinking.

No one knows where he's buried.

According to Priscus, Attila's army grieved their lost leader by smearing their faces with blood and riding their horses in circles around the tent holding his body. That night, his body was encased in three coffins–one gold, one silver, one iron–and buried in a tomb filled with the weapons of his defeated enemies, along with jewels and other treasures. As legend has it, a river was diverted so that Attila could be buried in its bed, and the waters were then released to flow over the grave. The servants who buried Attila were subsequently killed to prevent them from revealing his final resting place. The location



Hard to believe it's real!

Pteronophobia **is the fear of being tickled by feathers. It's also a fear of feathers themselves. The word "ptero" is the Greek word for feather, and "phobia" meaning fear.**

While human-level intelligence remains difficult, AI has excelled in traditionally human-areas of cognitive ability including vision, pattern recognition, and language. In addition to new capabilities and productivity, how will the continued deployment of AI impact employment, cooperation, happiness, and society?

Fact: Scotland has...yes, 421 words for "snow"!

Some examples:
Feefle - to swirl
Flindrikin - a slight snow shower
Snaw-pouther - fine driving snow
Spitters - small drops or flakes of wind-driven rain or snow
Unbrak - the beginning of a thaw

Read the full article "Scots 'have 421 words' for snow", **www.bbc.com**

Don't miss these other 11 random interesting facts about snow. **www.rd.com**

Myth: Water conducts electricity

While this is a science myth, it doesn't mean you should bring your toaster in the bath with you. The reason you shouldn't swim in a lightning storm doesn't have to do with the water itself. Pure water is actually an insulator, which means it doesn't conduct electricity. The danger comes from the minerals and chemicals in it called ions, which have an electric charge. While pure water is theoretically safe around electricity, it's nearly impossible to find in the real world because even distilled water has ions.

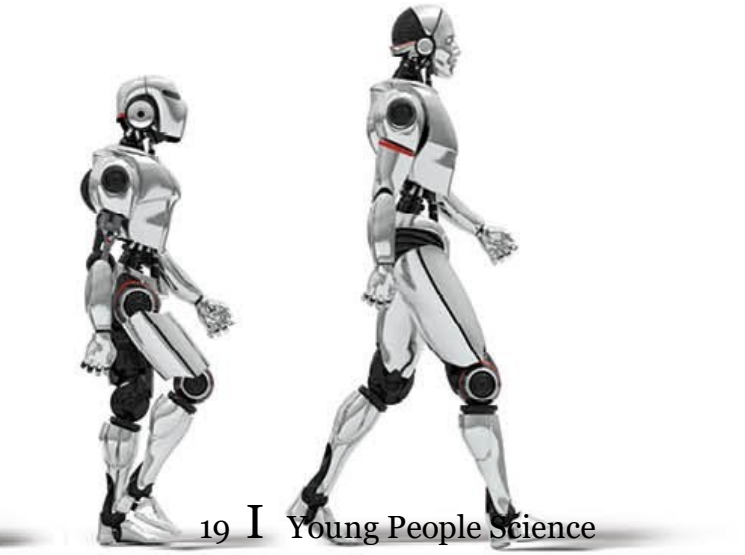
Find out which of your favorite science "facts" are actually false. **www.rd.com**

Copper door knobs are self-disinfecting.

Copper and its alloys, such as brass, have long been popular materials for manufacturing door knobs. It turns out, this may not just because the metal's hue makes it look nice. In fact, the material has been found to kill bacteria.

According to one study from the National College of Kathmandu in Nepal, "the metal ions denature protein of the target cells by binding to reactive groups resulting in their precipitation and inactivation. The high affinity of cellular proteins for the metallic ions results in the death of the cells due to cumulative effects of the ion within the cells."

In other words, brass sterilizes the bacteria that can build up from all those (potentially unwashed) hands that grip it.



The Laws of Chemistry

By Dr. Helen Fisher Ph.D. www.newwordpress.helenfisher.com

As an anthropologist, I have long been captivated by one of the most striking characteristics of our species: We form enduring pair bonds. The vast majority of other mammals—some 97 percent—do not.

In my previous work I proposed that humanity has evolved three distinct but overlapping brain systems that enable us to fall in love and form long-term emotional connections:
the neural systems for the sex drive, romantic love, and attachment. We are all alike in having these three primary brain networks. In other ways, however, each of us is unique. We don't fall in love with just anyone. We have deep and idiosyncratic preferences. Why do we fall in love with one person rather than another?

There is much evidence that people generally fall in love with those of the same socioeconomic and ethnic background, of roughly the same age, with the same degree of intelligence and level of education, and with a similar sense of humor and grade of attractiveness.

But you can walk into a room of 40 people all from your background, with your level of education, degree of intelligence and good looks, and you don't fall in love with all of them. "The road of love is narrow," wrote Kabir, a 15th-century poet of India. "There is only room for one." How do we form this preference—one that is so crucial to our reproductive future?

Among the myriad forces that sculpt our romantic choices is what I call your "love map,"
an unconscious list of qualities you begin to build in childhood. Your mother's wit and way with words; your father's interest in politics and tennis; what your siblings like and hate; the values of your friends and teachers; what you see on television. All your childhood (and adult) experiences shape and reshape your template of the ideal romantic partner.

By the teenage years, each of us has constructed an idiosyncratic catalog of traits, values, aptitudes, and mannerisms that appeal to us.

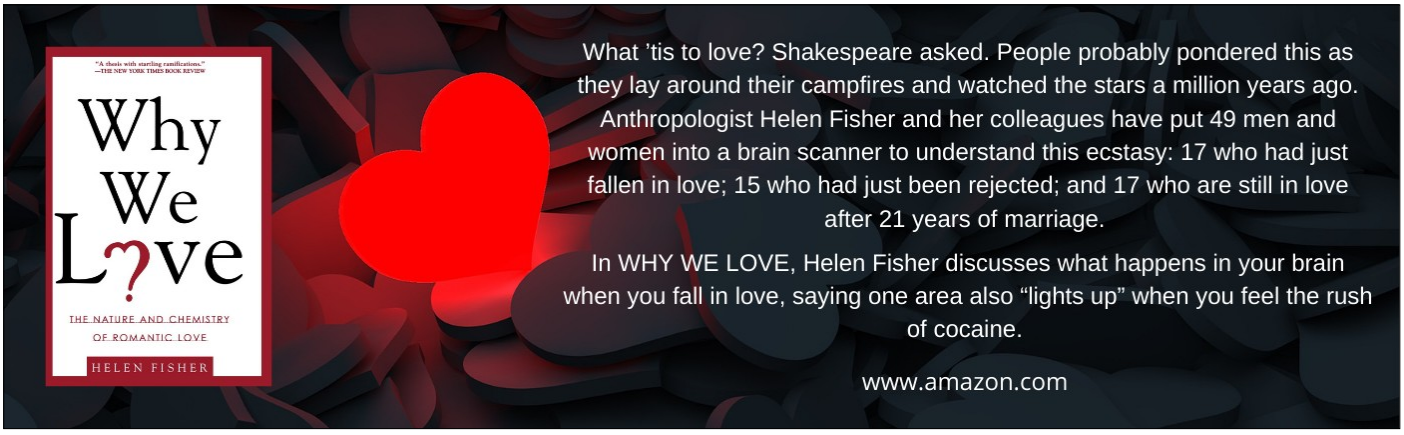
Dr. Fisher has looked at marriage and divorce in over 80 societies, adultery in over 42 cultures, patterns of monogamy and desertion in birds and mammals, and gender differences in the brain and behavior. Today she is applying her understanding of brain chemistry and personality to business, specifically the neuroscience of leadership and innovation.

Listen to the Mating Matters Episode – The Slower Road to Love on **www.iheart.com**

Then, when the timing is right and we meet a person who registers on our love map, a cascade of brain chemicals is triggered that tells us with euphoric certainty that we have found the one. But I have come to believe that there's more to mate choice than your childhood, your background, your values, and your degree of good looks. These variables act in tandem with a silent partner: your biology. What sparked my thinking on this was a classic study now commonly known as the sweaty T-shirt experiment.

Women are unconsciously attracted to men with a different immune system; they do it by smell. If you are attracted to someone whose immune system is different from yours, why wouldn't you also be attracted to those with other genetic differences? Mates with distinctly different genetic profiles would produce more genetically varied young.

It is this line of logic and investigation that I embarked on two years ago. Psychologists have searched exhaustively to find personality factors that play a role in romantic attraction. ›››



Do opposites attract? Or is similarity the elixir of love? No consistent patterns emerge. Extroverts don't always fall for extroverts, for example—or for introverts. With some traits, people gravitate to those who are similar; in others, they prefer individuals who complement them. Psychologists report a temptation to throw in the towel on how personality influences partner selection.

Could nature have left this essential aspect of reproduction to the whims of upbringing and social background? I doubt it. Your choice of mate is crucial to your genetic future.

Moreover, it is now believed that 50 percent of variance in personality is due to "temperament", our predisposition to think and act in certain ways. Cross-cultural surveys, brain imaging studies, population and molecular genetics, twin studies—all suggest that the traits of temperament are universal and tied to our genetic makeup. Could temperament play a role in mate choice?

Four Neural Systems

The most discussed traits of temperament are the "big five" personality factors: openness to new experience conscientiousness, extroversion, agreeableness, and neuroticism (or anxiety). These traits are stable across the life cycle; if you're curious when young, you're likely to be curious when older. Twin studies, as well as the universality and stability of these personality styles, point to a genetic basis.

Since antiquity, poets, philosophers, and physicians have classified people into four styles of temperament. Plato called them the Artist, the Guardian, the Idealist, and the Rational. I theorize that these very broad basic styles of thinking and behaving are biologic trait clusters linked with specific constellations of genes, neurochemicals, and brain pathways, perhaps best described as genetic profiles. I hypothesize that we unconsciously gravitate to individuals with a somewhat different genetic profile—a strategy that evolved in tandem with human pair-bonding to enable our forebears to produce genetic variety in their young and raise infants with a wider array of parenting skills.

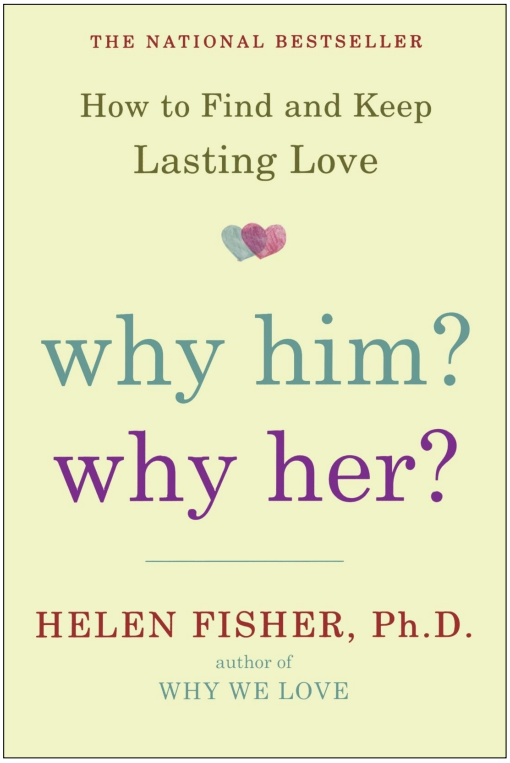
How genes interact with other genes, how genes build proteins, how proteins build brain and bodily pathways, how these pathways interact, and how the environment sculpts these systems at every level is wildly complex and still largely unknown. Nevertheless, current data suggest that four basic chemical systems—those for dopamine, serotonin, estrogen, and testosterone—are associated with suites of traits that echo Plato's four temperament styles.

Applying a shorthand that synthesizes much information about biology and behavior, I refer to those whose temperament reflects the dominance of dopamine as Explorers. These men and women tend to be risk taking, novelty seeking, impulsive, creative, and curious—traits associated with specific genes or pathways in the dopamine system. Those in whom serotonin pathways may be dominant I call Builders; these men and women tend to be social, popular, cautious (but not fearful), rule following, conventional, and often religious or spiritual.

Those who express activity in estrogen pathways I dub Negotiators, women (and men) who tend to be verbally skilled, good at "reading" people's faces, posture, gestures, and tone of voice, contextual thinkers, compassionate, nurturing, imaginative, and agreeable. Those who express the effects of testosterone I call Directors, men ›››

(and women) who are direct, decisive, focused, outwardly competitive, analytical and logical, and skilled with machines and other rule-based systems. We're all a mix of all four types, of course; but most people express some of these behavioral syndromes more than others.

Serendipitously, I was asked by an online dating service, Chemistry.com, a subsidiary of Match.com, to apply what science knows about attraction to help build a state-of-the-art matching system for singles. The service provides an opportunity to test my theory in real life as well as the prospect of applying science to the public good.



First I developed a 56-item questionnaire to measure the degree to which men and women express each behavioral syndrome. A shortened version of my test appears at the end of this article.

Based on the test, Chemistry.com members are assigned to one of 12 categories, reflecting primary and secondary temperament type. I am, for example, an Explorer/Negotiator, a person with greater expression of dopamine and estrogen systems. One can be an Explorer/Director, Builder/Negotiator, and so forth.

So far, 1.6 million American men and women have taken the test, and I have analyzed data on the first 523,622. Builders predominate (42 percent of the population). There are far fewer Explorers (8 percent) than any other type—a frequency that correlates with the distribution of a specific genetic variant in the dopamine system associated with novelty seeking and risk taking. Perhaps Builders were essential in ancestral times to stabilize community life, while Explorers were crucial only under changing ecological circumstances. Explorers gravitate to big cities, perhaps drawn to the novelty, energy, excitement, extravagance, and risk. Builders stay home and guard the heartland.

To look at mate choice, I took a subset of 2,766 site members and examined their reactions to one another after a first meeting. The site asks members to report on their degree of attraction to the individual they just met.

First meetings are powerful. They often set the course for the entire relationship. The data so far suggest that just about everybody loves Negotiators; all types (except male Builders) gravitate to these agreeable, imaginative, verbal men and women. More important to my theory, men and women of all broad temperament types (except the Negotiator) express more initial attraction for individuals with different, rather than similar, behavioral and cognitive profiles.

Roots and Wings

Builders, bathed in serotonin, appear to be particularly attracted to the dopamine-rich Explorers, and vice versa. Perhaps the orderly, rule-following Builder needs the spontaneity and novelty of the Explorer, especially when rearing the young. And perhaps the Explorer gravitates to the Builder because he or she provides roots, rules, and loyalty—the gravitas an Explorer desires to help rear children.

Directors favor Negotiators. Perhaps they need the Negotiator's social and verbal skills, broad contextual perspective, flexibility, and nurturing. And although Negotiators are foremost drawn to their own kind, they are also drawn to the Director. Perhaps the direct, competitive, focused, decisive, logical, analytical, and mechanically talented Director balances out their flexible nature, another effective combination for bearing and rearing young.

Which combination makes the most effective match? I suspect each combination has its own advantages and liabilities.

Perhaps mate choice operates like a funnel. First you see a potential partner and size him or her up—physically. Too big, too little, too old, too young, too pink, too green, too messy, too neat. If they make the cut, then you talk.›››

A bad accent, a dumb remark, a tasteless joke, a touch of arrogance, or some other idiosyncrasy may nip the budding romance. But if this stranger comes from your background, is of the right age, shares your level of intelligence and education, appears humorous and socially adept, has your values, fits within your love map, and the timing is right, you proceed. In these ways, similarity regularly reigns.

Then come your needs, psychological and physical. Many exchange good looks for money or rank. We are often attracted to those who mask our flaws and accentuate our better parts. Roles are important, too. As you size up him or her, you ponder whether you'd be comfortable as the wife of this college professor or the husband of that cafe singer. As you weigh the myriad social factors, I suspect that unconscious biological mechanisms are subtly pulling you toward those who complement you genetically.

My investigation is just beginning. But it has already altered my view of some of our behavior. Perhaps some of our ubiquitous marital friction stems from the need to choose partners suitable producing and raising babies—but not altogether understandable as companions.

Some psychological thinking holds that women are drawn to men like their fathers and men to women like Mom, often to resolve childhood issues. Perhaps women do marry someone like Dad—but for biological reasons. As a child you may have experienced friction with him due to your different temperaments, but as an adult, with your biological reproductive mechanisms in full bloom, you find yourself attracted to the genetic qualities you lack—the same ones Dad has.

There is magic to love. I doubt we will ever understand (or harness) all the myriad forces that play a role in mate choice. But we can help Cupid as we eavesdrop on nature's plans.

■ ■ ■

This article was first published on the website of Psychology Today, **www.psychologytoday.com**

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How to Use Our Brain to Achieve Our Goals and Overcome Our Fears in Life?

By Maria Anna van Driel, www.nexttruth.com

Dr. Srini Pillay was the top medical student at his medical school in South Africa prior to completing residency training in psychiatry at Harvard Medical School where he won more awards than anyone else at Harvard. With 17 years of nationally-funded brain imaging research under his belt, he is now a brain science innovator who spends his time as a psychotherapist, leadership development expert, technology entrepreneur, and musician. An American born to third generation South Africans with an Indian heritage, Srini is most excited about radical collaboration in a boundaryless world.

Learn more about Dr. Pillay and his new book at ***https://drsrinipillay.com/meet-srini/***

Welcome Dr. Pillay, I appreciate the time you took for letting us peer into your career and some of your ideas, theories and the research within your field of science.

Q: As a professor at Harvard and world leading neuroscientist, can you tell a little bit about yourself? Who is Dr. Srini Pillay?

Dr. Pillay: That's a loaded question. I think the "self" is quite complicated. Aside from who we are, all of the people we encounter and all of the places we visit are recorded in our brains. So to tell you about myself, I'd have to tell you about the past, present, and future—my memories, attention, and hopes and dreams—which would be along story. Of course, in a quite literal way I could say that I spend most of my time challenging boundaries and building bridges. So even though I am a practicing psychiatrist, brain-imaging researcher, biotechnology researcher across cancer, heart disease, stroke and other diseases, a technology entrepreneur, and a musician who just completed writing an operetta, I use my love of human beings and brain science to build bridges across the world.

That's who I am-a bridge builder who is fortunate to channel universal consciousness through his own brain.

Q: The University you are working for/with is doing research in… ?

Dr. Pillay: Harvard does a lot of research. So does The McKinsey & Co. Academy, with whom I am affiliated. And NeuroBusiness Group, the company I founded and run is also involved in some research. My early career research was in brain blood flow and anxiety disorders. I asked questions about how the brain worked when people were anxious or in different consciousness states. Now I am more interested in personalized data and collecting data that is not just averaged across different people. So I probe human behavior, leadership and what makes people tick.

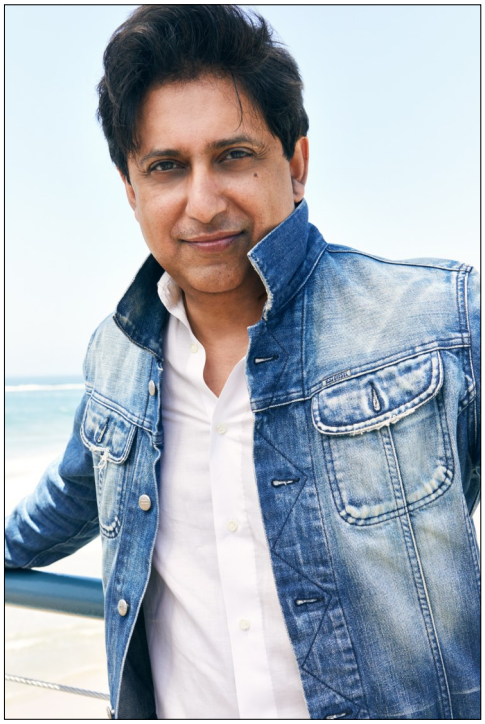
Q: What was it that inspired you to step into this particular corner in science?

Dr. Pillay: I don't really know. Great teachers? God? Other people? Intense curiosity? A lot of early life hard work makes a lot of this period of my life feel like play. ›››

Q: Did you know already at a young age that you wanted to become a scientist?

Dr. Pillay: Again, who knows what I knew. The truth is, we remember very little truth reliably about our younger days. So maybe I did. I think I did. I remember telling my dad I wanted to be a brain doctor, teacher, musician, and inventor. That's what seems to be happening.

Q: How did you experience your study time?



"I always want to improve my skills even if I do not excel at something like e.g. tennis."

Dr. Pillay: I am fiercely competitive and also fiercely collaborative. I am a "Rat Pack" kind of guy, though more recently I prefer to interact in dyads. I have strived very hard to distinguish myself academically: top student every year at school from the first to 11th grade; top 10 student in 12th grade in high school in South Africa; top medical student; top award winner at Harvard. And I have loved the entire academic journey. But I think that a strong impetus for me was to be able to stand up in this phase of my life and say, "Education does not define us. Nor does it indicate what our capabilities are. For those like me who needed it to guide and direct their intelligence, it can be very helpful. But for those who don't do well with it, that's all it means—you don't do well in that system. It says nothing about your intelligence or capabilities. I believe we can all live far above the capabilities that education refines and defines."

Q: In your busy schedule, is there still room for hobbies?

Dr. Pillay: I don't really have hobbies. I take life more seriously. Even if I do not excel at something e.g. tennis, I always want to improve. Reading about style, fashion, design—all this, I take very seriously.

Q: What is the most hilarious moment in your career?

Dr. Pillay: Every day is quite hilarious. There's no one moment that stands out.

Q: How and why is it that we keep creating and maintaining a reality that we, deep down inside, know is an illusion ?

Dr. Pillay: Perception is persuasive. Illusions are evasive. Groupthink forces us to communicate with unconscious lies. The unconscious is not visible. It is not obvious that we have equal numbers of human and bacterial cells…that we are mostly water too. This is why we maintain a false reality. And also, so that we can avoid the discomfort and anxiety of the gravity-less-ness of freedom.

Q: In one of your videos people can view via e.g. You Tube, you state that we rather like to master disappointment instate of seeking fulfillment. Why is this behavior seen with people?

Dr. Pillay: Our brains are wired to process fear above all other emotions. We want to be good at this. So we practice this, not realizing that we have the option to channel a different experience of life with our brains. Some may say all this "channel" talk is a little too soft. I'd agree. But I believe it. And I believe in belief. Most people are looking for evidence for belief. That's like trying to swim with your feet on the ground. It won't happen.

Q: How and especially why do keep people placing themselves in "context cages" that limit their ability to achieve their goals?

Dr. Pillay: Some would say it is biological. We are conditioned to be influenced by our contexts. Habit, I think, is largely responsible for this kind of automatic behavior. Neurons that fire together, wire together.

Q: How do we use our brain to achieve our goals and overcome our fears in life? Is there a simple method for all to use?

Dr. Pillay: Oh, God. That's a big question. I wouldn't take that approach. Not all fears should be overcome. Some are helpful. ›››

But when fears are not helpful, we can use my CIRCA method: Chunk down the challenge; Ignore mental chatter using mindfulness; Reality check using self-talk such as "this too shall pass"; Control check using self-talk like the serenity prayer and Attention shift by shifting your attention from the problem to the solution. But nothing is that simple. The unconscious often has another agenda. We have to look more deeply.

Q: Reading your website we find that you completed fellowships in Psychopharmacology, Structural Brain Imaging and Functional Brain Imaging. Can you explain what the science of Psychopharmacology contains?

Dr. Pillay: Psychopharmacology involves using medicines to alleviate psychologically torturous symptoms that people experience. These medications change brain chemistry and try to restore more manageable feeling and thinking states

"No problem can be solved from the same level of consciousness that created it."
Albert Einstein

Q: Reading the abstract "Neuroscience, VR and neuro-rehabilitation: brain repair as a validation of brain theory." that argues a new theory of cyber-therapy whereby a virtual reality could be the next step in brain repair. What are your thoughts of an evolvement as such?

Dr. Pillay: I think virtual reality is already being used for this. e.g. I think that VR is a helpful way to get you out of your head and into your body too. Your body thinks too.

Q: Which role does the brain play in everyday reality and non-reality?

Dr. Pillay: It's quite a "busy body" taking up 2% of space but using 20% of the body's energy at rest. The brain picks up puzzle pieces and puts them together too. But I think it's capability increases when consciousness (the energy that lies between us) finds a home frequency in the brain. I think that many of our beliefs and illusions are processed by the brain. But I don't believe that the brain is where intelligence originates.

Q: The Claustrum holds for many still an unknown purpose. If any at all, which effect does this thin sheet in the human brain have on our reality?

Dr. Pillay: I think of the Claustrum as the great integrator of sensations. And because of its extensive connections with the cortex, I think that it is involved in higher cognitive processing and resilience to distraction. In that sense, it is a reality integrator, but if it has connections to the cortex, I imagine it can be misled by foolish logic as well.

Q: Which theory, or theories, is neuroscience holding when the topic "psi" is discussed? What is your theory within this phenomenon?

Dr. Pillay: Different neuroscientists have differing opinions about psi. Some studies suggest psi does not exist while others suggest that it is subserved by the limbic system. The jury is out, though most people would probably say it is a delusion generated by the brain. I think that it exists. I don't believe that it is generalizable yet. But I believe that personalized research will show that messages can be transmitted across long distances if channeled. We already have data to support this.

Q: It is thought by some that the brain is only an organ which provides the needed chemicals and electricity for the Cellular Memory which could be the real storage for our memories in state of our brain. What are your thoughts concerning this theory?

Dr. Pillay: I don't think that brain is ONLY anything. I think it is fantastic, beautiful, glorious, essential for life, and life-sustaining. I believe however, that our bodies and brains are connected, and that there is an exchange of information between all tissues in the body. Cellular memory is real. ***www.ncbi.nlm.nih.gov*** ›››

Q: You received the "Books for a Better Life" award for your book, "*Life Unlocked: 7 Revolutionary Lessons to Overcome Fear*". What does this award means to you and for your carrier?

Dr. Pillay: I really appreciate the book being recognized. Fear is so pervasive, and knowing that people care enough to spread the word meant a lot to me. It was a definitely a life-changer for me to publish my first book and have it be recognized in this way. It was also a complete surprise. I didn't expect it.

"Anxiety is actually the dizziness of freedom"

Soren Kierkegaard

Q: What made you write this book? Where can we find it?

Dr. Pillay: Not sure of the reasons. Was it because I grew up in a fear-ridden apartheid society in South Africa? Was it because I used to run the Anxiety Disorders center? Was it because I saw how conscious and un conscious fear disrupted the lives of so many people? Was it because fear overrides all self-expression and I believe that the inhibition of self-expression is the source of all disease? Perhaps all of these factors… You can find it on Amazon at ***https://amzn.to/2RMuCF8***

Q: Your latest book "Tinker Dabble Doodle Try", what does it reveal? What can people learn from this book?

Dr. Pillay: It reveals that focus is great, but it also has disadvantages: it exhausts your brain, gives you blinker-vision, prevents you from looking into the future, inhibits making connections for innovation and makes you less self-connected. This book will teach you that we are all day-dreaming for 46.9% of the day, so why not learn to daydream effectively. It's filled with helpful methods to unfocus. People will learn how to do this.

Q: Will neuroscience ever provide the evidence of what is real and what is not?

Dr. Pillay: It will help. But it's not the only way. To answer that question, I believe that meditation is key.

Q: If people/schools/institutes would like to speak to you, where can they find and/or hire you?

Dr. Pillay: ***srini@neurobusinessgroup.com*** and I am at ***www.drsrinipillay.com*** and ***www.nbgcorporate.com***

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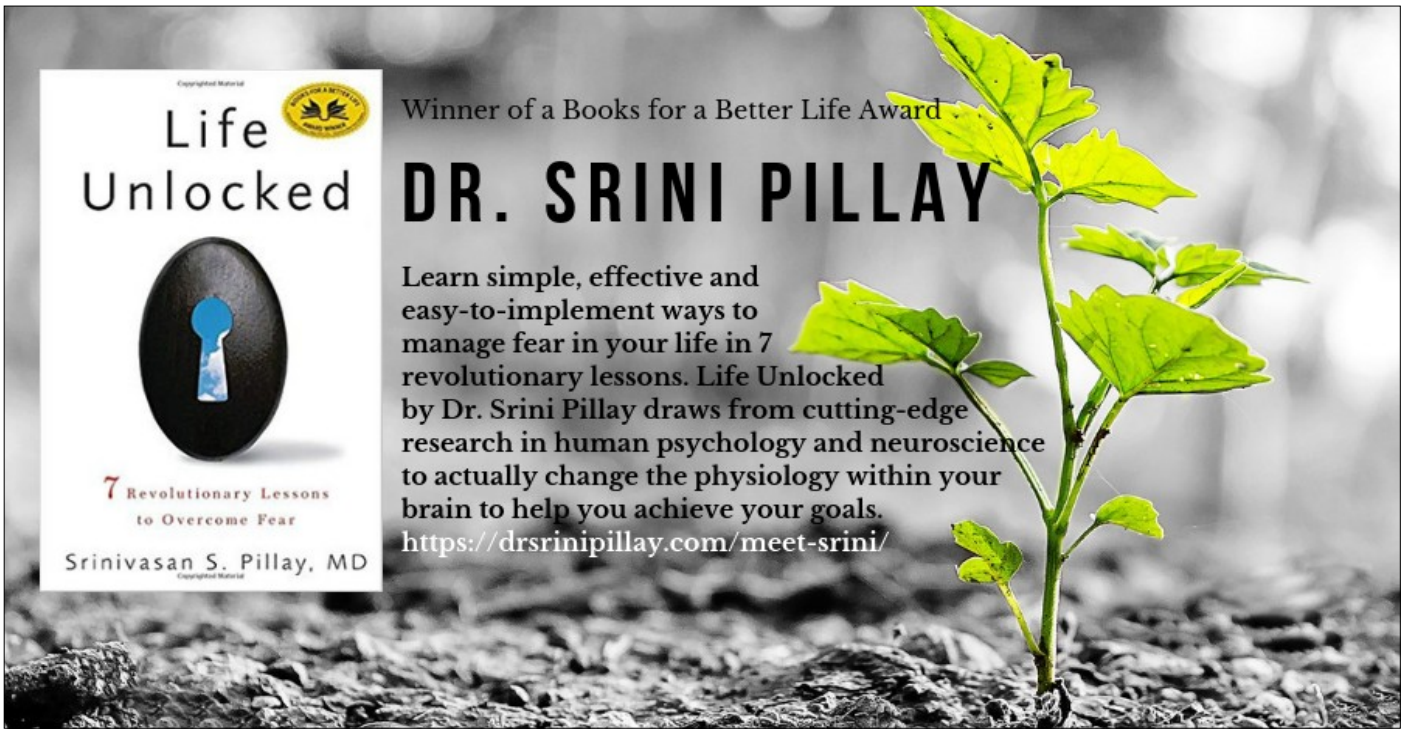


***Fact:* Glitter was made on a ranch**

A cattle rancher in New Jersey is credited for inventing glitter, and it was by accident. Henry Ruschmann from Bernardsville, New Jersey was a machinist who crushed plastic while trying to find a way to dispose of it and thus made glitter in 1934.

***Fact:* Onions were found in the eyes of an Egyptian mummy**

Pharaoh Ramses IV of Ancient Egypt had his eyes replaced with small onions when he was mummified. The rings and layers of onions were worshipped because people thought they represented eternal life. This aligns with the reason for mummification: to allow the pharaoh's body to live forever. Let's hope these interesting facts don't all apply to practices used today.

***Fact:* The word aquarium means "watering place for cattle" in Latin**

In the classic Latin language, aquarium means a "watering place for cattle." However, aquariums these days aren't for cows—instead, they are a place for the public to see sea creatures. The first aquarium that looks like what you'd imagine now was created in 1921 and opened in 1924 in England.

Fact: Ancient Egyptians used dead mice to ease toothaches

In Ancient Egypt, people put a dead mouse in their mouth if they had a toothache, according to Nathan Belofsky's book Strange Medicine: A Shocking History of Real Medical Practices Through the Age. Mice were also used as a warts remedy during Elizabethan England.

The Bermuda Triangle isn't any more likely to cause a mysterious disappearance than anywhere else.

This area in the North Atlantic Sea is also called "The Devil's Triangle" because it is an area of the ocean that stretches between the tip of Florida, Bermuda, and Puerto Rico. It has been thought to seemingly swallow up ships and aircrafts. Explorers as far back as Christopher Columbus have reported odd occurrences, like fireballs in the sky (that turned out to be a meteor crashing).

But historians, scientists, and the U.S. Coast Guard have proven that vessels are no more likely to disappear in the Bermuda Triangle than they are anywhere else in the ocean. Many prior disappearances have been demystified as remains of numerous wrecks were discovered or explained by weather patterns in the area at that time.

Pluto technically isn't even a year old.

Pluto was discovered on February 18th, 1930. It is the farthest (dwarf) planet from the Sun, requiring it to go a much farther distance than we are used to on Earth. It takes 248 Earth-years for Pluto to complete one rotation of its own around the sun. This places Pluto's first birthday since its discovery on Monday, March 23, 2178.

Newborns don't have kneecaps.

This belief is only a half truth, as babies actually technically do have kneecaps when they are born. Those knees just aren't hardened yet, and remain soft cartilage throughout their childhood until they eventually turn into bone.

In Germany, people help toads cross the road.

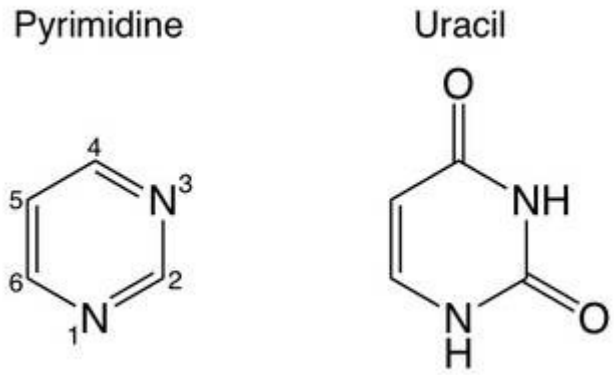
You might not want to bring up the popular video game Frogger in Germany. There, they like to protect their frogs, toads, and other amphibians. In order to save them from harm when crossing the street, conservation organizations installed more than 800 fences along popular roadways. Along these fences are buckets, so when they try to cross, they eventually hop into one. At the end of the day, wildlife conservationists collect the buckets and release frogs across the road into a nearby forest with ponds and lakes.

NASA Ames Reproduces the Building Blocks of Life in Laboratory

By NASA, www.nasa.gov

NASA scientists studying the origin of life have, in 2015, reproduced uracil, cytosine, and thymine, three key components of our hereditary material, in the laboratory. They discovered that an ice sample containing pyrimidine exposed to ultraviolet radiation under space-like conditions produces these essential ingredients of life.

Pyrimidine is a ring-shaped molecule made up of carbon and nitrogen and is the central structure for uracil, cytosine, and thymine, which are all three part of a genetic code found in ribonucleic (RNA) and deoxyribonucleic acids (DNA). RNA and DNA are central to protein synthesis, but also have many other roles.



Pyrimidine is a ring-shaped molecule made up of carbon and nitrogen and is the central structure for uracil, cytosine, and thymine, which are found in RNA and DNA. *Photo credits: NASA*

"We have demonstrated for the first time that we can make uracil, cytosine, and thymine, all three components of RNA and DNA, non-biologically in a laboratory under conditions found in space," said Michel Nuevo, research scientist at NASA's Ames Research Center, Moffett Field, California. "We are showing that these laboratory processes, which simulate conditions in outer space, can make several fundamental building blocks used by living organisms on Earth."

An ice sample is deposited on a cold (approximately –440 degrees Fahrenheit) substrate in a chamber, where it is irradiated with high-energy ultraviolet (UV) photons from a hydrogen lamp. The bombarding photons break chemical bonds in the ices and break down the ice's molecules into fragments that then recombine to form new compounds, such as uracil, cytosine, and thymine.

NASA Ames scientists have been simulating the environments found in interstellar space and the outer Solar System for years. During this time, they have studied a class of carbon-rich compounds, called polycyclic aromatic hydrocarbons (PAHs), that have been identified in meteorites, and which are the most common carbon-rich compound observed in the universe. PAHs typically are structures based on several six-carbon rings that resemble fused hexagons, or a piece of chicken wire.

The molecule pyrimidine is found in meteorites, although scientists still do not know its origin. It may be similar to the carbon-rich PAHs, in that it may be produced in the final outbursts of dying, giant red stars, or formed in dense clouds of interstellar gas and dust.

"Molecules like pyrimidine have nitrogen atoms in their ring structures, which makes them somewhat wimpy. As a less stable molecule, it is more susceptible to destruction by radiation, compared to its counterparts that don't have nitrogen," said Scott Sandford, a space science researcher at Ames. "We wanted to test whether pyrimidine can survive in space, and whether it can undergo reactions that turn it into more complicated organic species, such as the nucleobases uracil, cytosine, and thymine.

In theory, the researchers thought that if molecules of pyrimidine could survive long enough to migrate into interstellar dust clouds, they might be able to shield themselves from destructive radiation. Once in the clouds, most molecules freeze onto dust grains (much like moisture in your breath condenses on a cold window during winter).

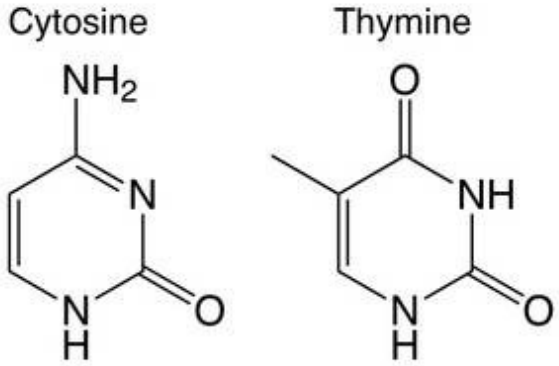
These clouds are dense enough to screen out. ›››

much of the surrounding outside radiation of space, thereby providing some protection to the molecules inside the clouds.

Scientists tested their hypotheses in the Ames Astrochemistry Laboratory. During their experiment, they exposed the ice sample containing pyrimidine to ultraviolet radiation under space-like conditions, including a very high vacuum, extremely low temperatures (–440 degrees Fahrenheit), and harsh radiation.

They found that when pyrimidine is frozen in ice mostly consisting of water, but also ammonia, methanol, or methane, it is much less vulnerable to destruction by radiation than it would be if it were in the gas phase in open space. Instead of being destroyed, many of the molecules took on new forms, such as the RNA/DNA components uracil, cytosine, and thymine, which are found in the genetic make-up of all living organisms on Earth.

"We are trying to address the mechanisms in space that are forming these molecules. Considering what we produced in the laboratory, the chemistry of ice exposed to ultraviolet radiation may be an important linking step between what goes on in space and what fell to Earth early in its development," said Christopher Materese, another researcher at NASA Ames who has been working on these experiments.



The ring-shaped molecule pyrimidine is found in cytosine and thymine. *Photo credits: NASA*

"Nobody really understands how life got started on Earth. Our experiments suggest that once the Earth formed, many of the building blocks of life were likely present from the beginning. Since we are simulating universal astrophysical conditions, the same is likely wherever planets are formed," says Sandford.

Additional team members who helped perform some of the research are Jason Dworkin, Jamie Elsila, and Stefanie Milam, three NASA scientists at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

The research was funded by the NASA Astrobiology Institute (NAI) and the NASA Origins of Solar Systems Program. The NAI is a virtual, distributed organization of competitively-selected teams that integrates and funds astrobiology research and training programs in concert with the national and international science communities

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This article first apeared on the website of NASA and was last Updated on Aug. 7, 2017 by editor Ruth Marlaire, **www.nasa.gov**

SUPERNOVA

Every 50 years or so, a massive star in our galaxy blows itself apart in a supernova explosion

A Type Ia supernova is produced by a sudden thermonuclear explosion that disintegrates a white dwarf star

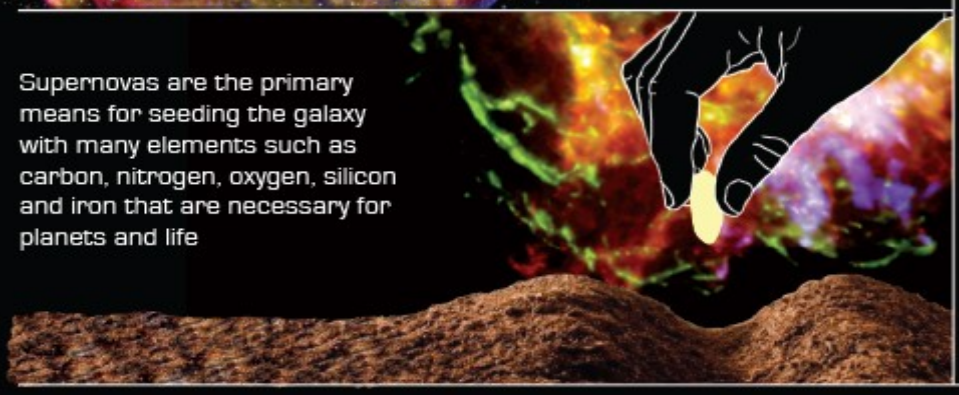
Supernovas are one of the most violent events in the universe, and the force of the explosion generates a blinding flash of radiation, as well as shock waves analogous to

SONIC BOOMS

Core-collapsing supernovas produce a brilliant visual outburst that can be as intense as the light of several billion Suns

Tycho's supernova, observed in 1572, was so bright that it was visible during the day

Supernovas are the primary means for seeding the galaxy with many elements such as carbon, nitrogen, oxygen, silicon and iron that are necessary for planets and life



Chandra's image of the Crab Nebula reveals rings and jets of high-energy particles that appear to have been flung outward over great distances from the neutron star

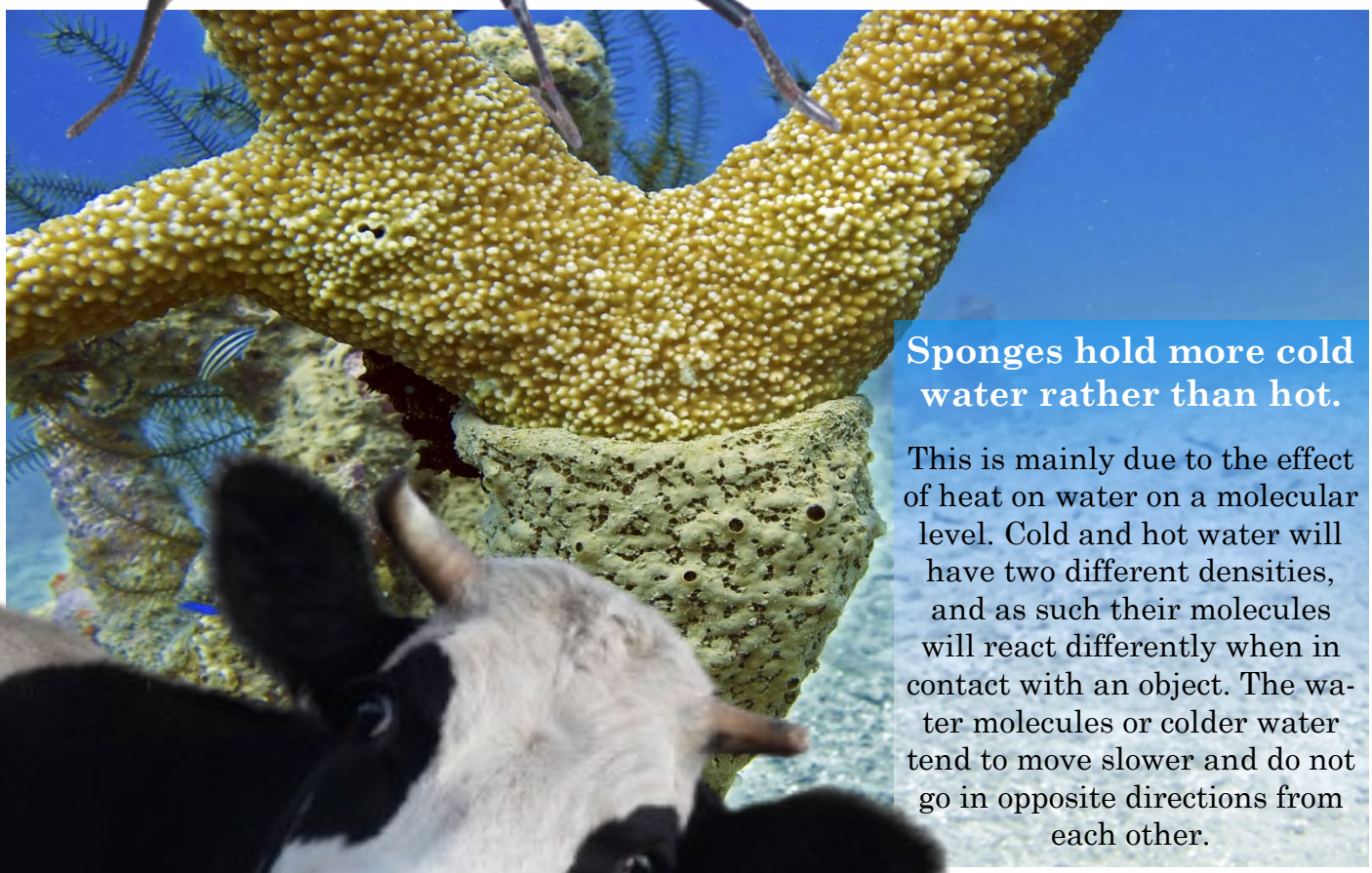
The diameter of the inner ring is about **1000** times the diameter of our solar system

HTTP://CHANDRA.SI.EDU

Q&A

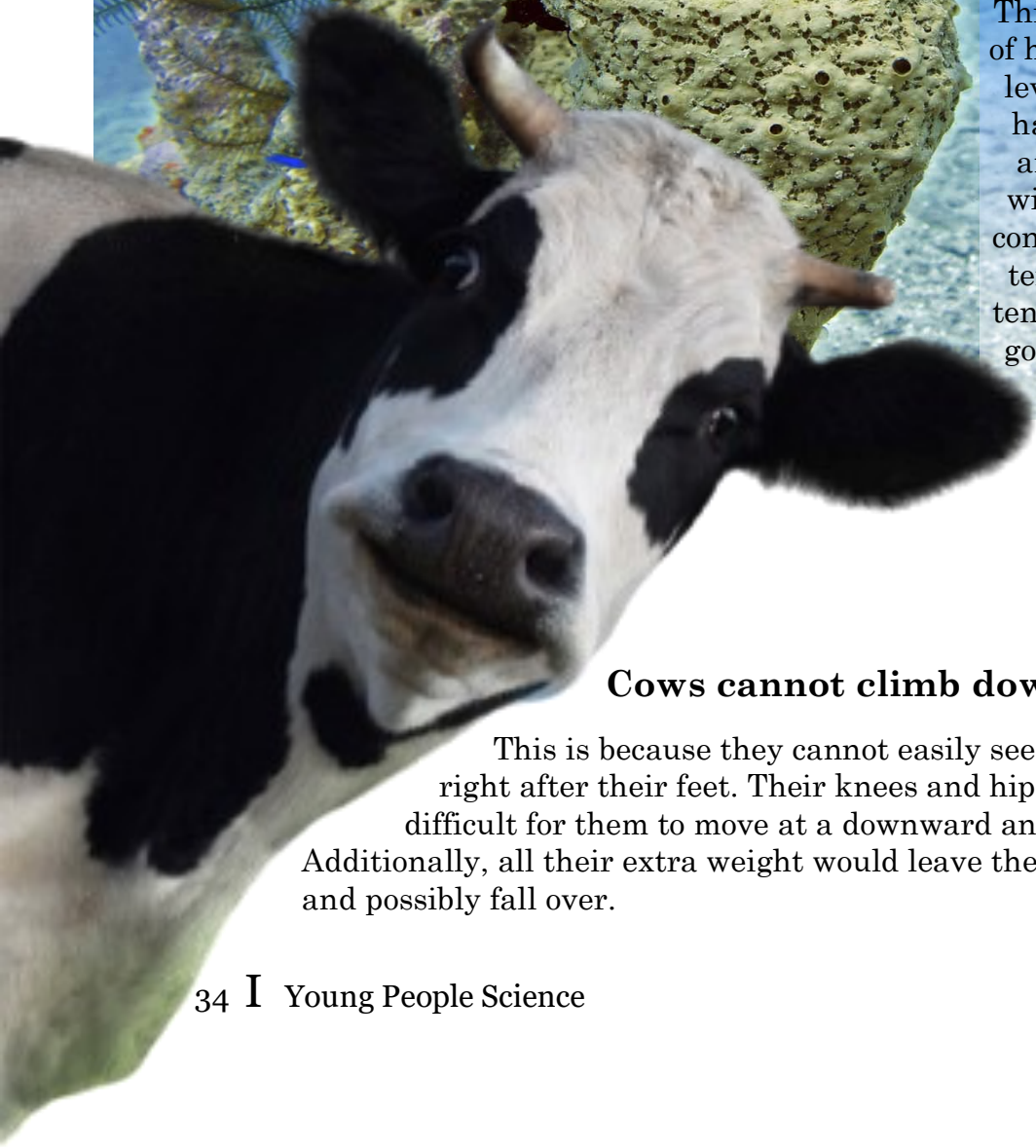
Spiders are not insects.

All insects are classified as six-legged creatures with a head and thorax and wings. Spiders are arachnids and only have two body parts: the cephalothorax and its eight legs, and its abdomen.



Sponges hold more cold water rather than hot.

This is mainly due to the effect of heat on water on a molecular level. Cold and hot water will have two different densities, and as such their molecules will react differently when in contact with an object. The water molecules or colder water tend to move slower and do not go in opposite directions from each other.



Cows cannot climb downstairs.

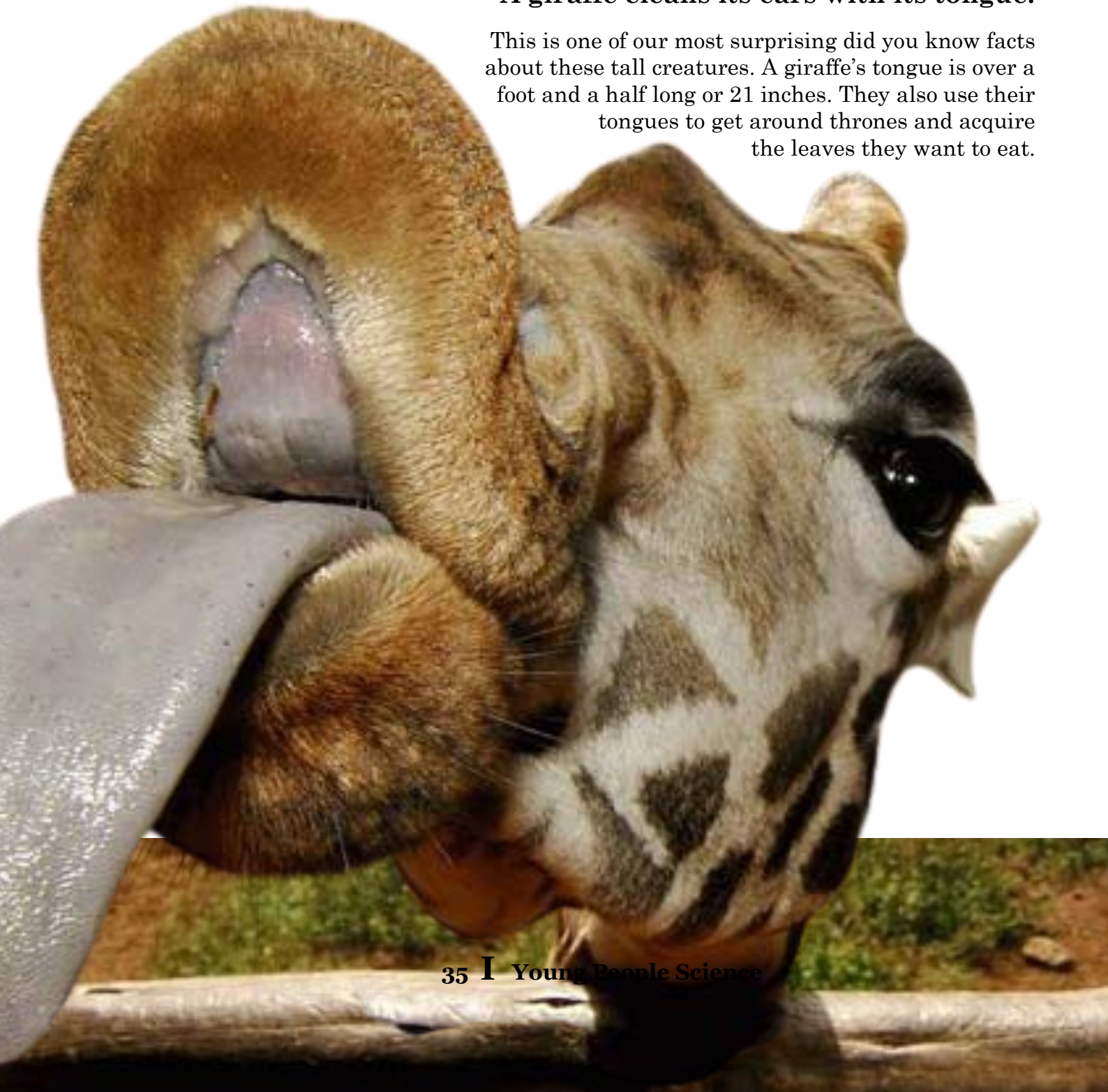
This is because they cannot easily see the ground right after their feet. Their knees and hips also make it difficult for them to move at a downward angle. Additionally, all their extra weight would leave them off-balanced and possibly fall over.

Honey never spoils.

Here's one of our sweetest did you know facts about food. When honey is heated and strained and sealed properly, it will not be able to absorb moisture and therefore will stay as it is forever. The oldest jar of honey ever found is stated to be over 5500 years old today.

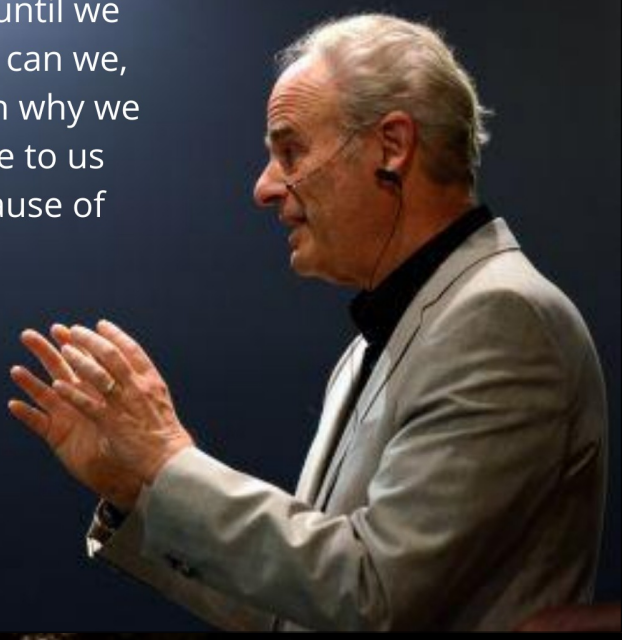
A giraffe cleans its ears with its tongue.

This is one of our most surprising did you know facts about these tall creatures. A giraffe's tongue is over a foot and a half long or 21 inches. They also use their tongues to get around thrones and acquire the leaves they want to eat.

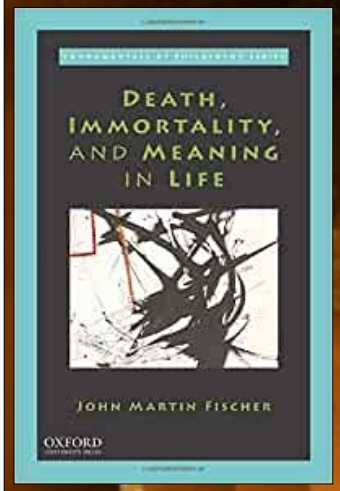


Near-Death-Experiences; Are They Real?

"Everything seems to be immensely creepy until we know and understand its source. Therefore, can we, with some caution, state that this the reason why we fear death this deeply? Do we fear death due to us neither understanding the source nor the cause of the origin of life?"



John Martin Fischer is a professor of philosophy at the University of California, Riverside, and the author of "Near-Death Experiences: Understanding Visions of the Afterlife" and "Death, Immortality, and Meaning in Life." **www.philosophy.ucr.edu**

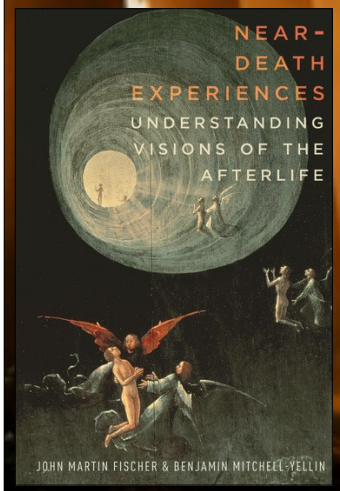


Death, Immortality, and Meaning in Life

By Prof. John Martin Fischer, PhD., **www.amazon.com**

The most recent addition to the Fundamentals of Philosophy series, John Martin Fischer's *Death, Immortality, and Meaning in Life* offers a brief yet in-depth introduction to the key philosophical issues and problems concerning death and immortality. Its engaging and accessible narrative is clearly organized into ten chapters that address meaning in life, death, the badness of death, time and death, ideas on immortality, near-death experiences, and extending life through medical technology.

Oxford University Press, 2020.



Near-Death Experiences

Understanding Visions of the Afterlife

By Prof. John Martin Fischer with Ass. Prof. Benjamin Mitchell-Yellin, **www.global.oup.com**

"Near-death experiences" offer a glimpse not only into the nature of death but also into the meaning of life. In a unique scientific based contribution to the growing and popular literature on the subject, philosophers John Martin Fischer and Benjamin Mitchell-Yellin examine prominent near-death experiences, such as those of Pam Reynolds, Eben Alexander and Colton Burpo. They combine their investigations with critiques of the narratives' analysis by those who take them to show that our minds are immaterial and heaven is for real.

facebook Facts

Al Pacino was the first "face" on Face-book.

By the end of 2019, Facebook had offices in 70 cities worldwide.

One gram of your DNA could store all of Facebook and Google's data.

You can change your language on Facebook to "Pirate."

Facebook is primarily blue because Mark Zuckerberg suffers red-green color blindness.

There are about 30 million dead people on Facebook.

In Britain, a woman was given 20 months in jail for creating fake Facebook profiles to send abusive messages to herself.

600,000 hacking attempts are made to Facebook accounts every day.

The Akashic Record

By Shaman Tony Damian, www.amazon.com

What is the Akashic Record?

The Akashic Field, or more commonly referred to as the Akashic Record, is thought of as a photographic film strip of an infinitive length that holds, in pictographic form, the past, present, future and life experiences of every living thing roaming our planet … since the beginning of time. Recorded here is; every human that ever lived or will live and the history of the entire animal kingdom, seen as thought patterns of human knowledge, actions and wisdom, past, present and future.

The Akashic record is a compilation of all human knowledge that exists and is thought to be accessible, on the Astral-Plane. These records hold no judgement of good or evil, they only declare what was, what is and what will be. The knowledge is seen as the ultimate understanding and insight; The 'Book of Life', the remembrance of God, if you will.

There are those who are of the belief that the Akashic records are comprised of the energy that makes up everything in the universe, throughout all space and time. This energy is called *Akasha* from the Sanskrit Akasa, denoting "hidden" or "secret space" with the rood word *kas* mining simply "to be".

When accessed selflessly - these visions, dreams, feelings, or downloads, so to speak, of knowledge have the ability of influencing our perceptions of (classical) reality and reveal what needs to be in an unattached, selfless manner that benefits all of mankind. It addresses all life on earth.

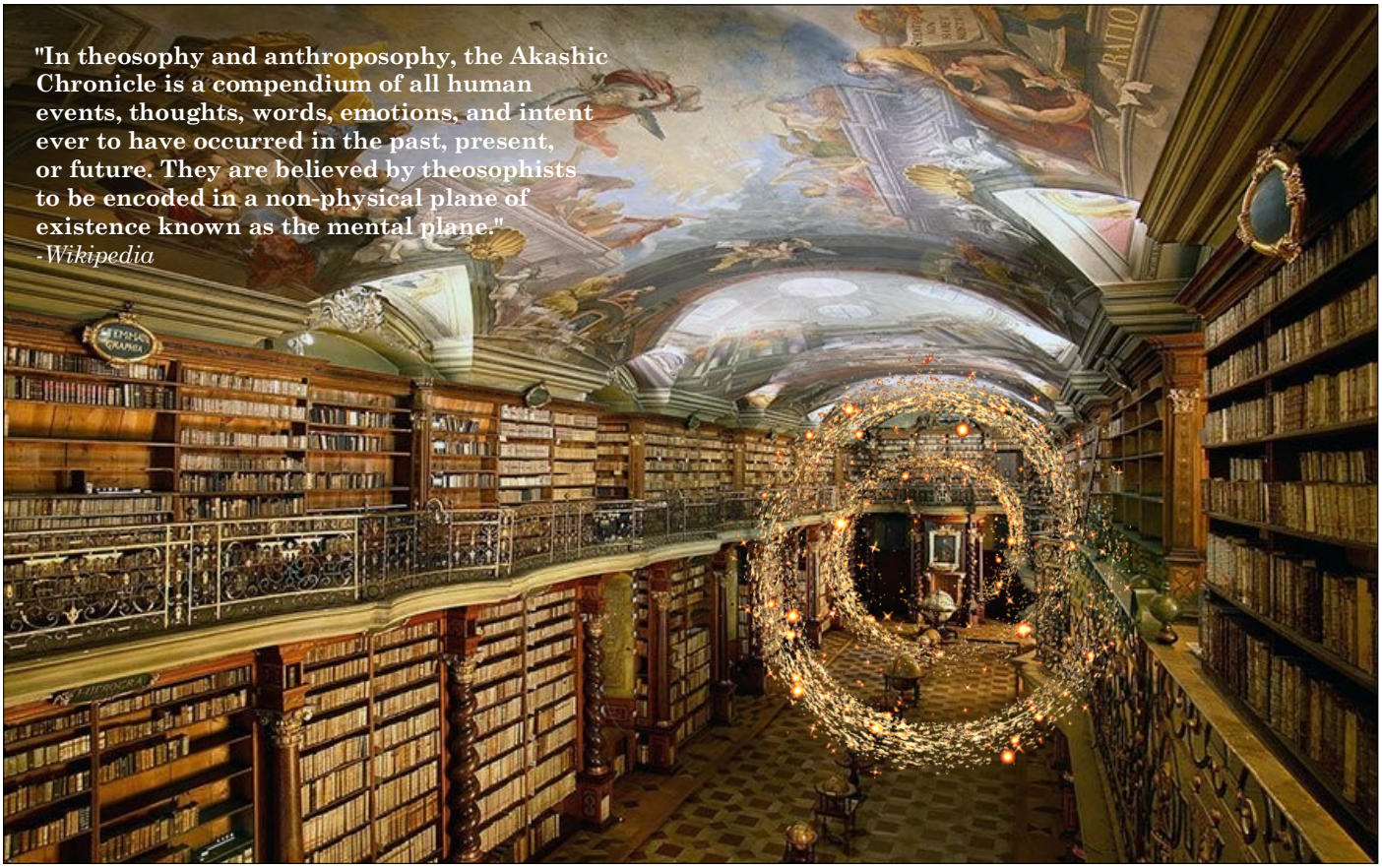
Gettysburg born Shaman, Tony Damian, is the author of "*Finding the Alchemist within - Turning yourself to Gold! A Journey through the Labyrinth of Self-Healing*" and "*The Way to Self-Healing Workbook: Your Guide for the Journey Inward through the Power of Your Mind*". His Healing quest has expanded into both facilitating the healing of other people, pets and wild animals and teaching it.
www.amazon.com

Where is the Akashic Record Kept?

All the information contained in this field of energy is believed, by some, to be stored in the ethereal plane, a non-physical place that is part of the cosmic whole. Within the human-energetic-self, the ethereal plane is the 5th layer known as the 'etheric template body', said to coexist in a different dimension and can only be seen by clairvoyants and very advanced healers. This layer extends one and one half to two feet from the physical body.

There are also those that believe the Akashic field is on the astral plane, also known as the astral realm. This is a plane of existence hypothesized by Classical Neo-Platonic, Oriental, Medieval, and Esoteric and Mystical philosophies as well as ancient religions. It is the Celestial Realm or sphere that surrounds the body at the Heart Chakra, the 4th layer of our aura. This chakra or the human body's internal energy field is known as the "Astral-Bridge." This bridge is said to be the crossover point between the physical being (below) and the higher-self, or soul, astral-body, or light-being (above).

The astral plane, popularized by Theosophy and Neo- Rosicrucianism in the late 19th and early 20th centuries, is where the soul must cross from the "world of the formless" into "the world of form" when we are born, then again after death in reverse. This is the Realm of Angels, Spiritual Beings, Ancestral Teachers, Spirit Animal Totems and other non-material beings of light, is thought of a plane being hundreds of times larger than our visual physical universe. ›››



Can we access the Akashic Record?

It is held in many belief systems that the Akashic Record can be accessed through deep meditation, non-self-attached prayer and deep intuitional connections from dreams. Edgar Cayce, a famous clairvoyant and teacher of metaphysics and considered to be the founder of the modern new age movement, said that the Akashic records are God's book of remembrance. Cayce attributes the Akashic Records as his source of information for his famous predictions, diagnosises and prolific insights. He would address a trance-like state, basically falling asleep and dreaming. He would talk in this state with answers to the question posed to him as his secretary took dictation. When he would awaken, he would have no memory of what it was that he had said.

'When there is the thought or the activity of the body in any particular environ, this very activity makes for the impressions upon the soul...As to the records made by such an activity, these are written upon what is known as time or space.' —Edgar Cayce

Crossing the Realms to Access the Akashic Field

There is a this thin space in time between a state of dreaming and being awake. Even though the physical body is neither sleeping nor awake, our mind is seems to be connected to the astral-plane whereby we have full access to the Akashic record. Just for a very brief moment in time we are connected to all of the memories of the universe, throughout all space and all time.

This space is interdimensional; we are cognizant of the data that resides here. We are consciously aware of the answers to all questions, the wisdom and teachings of our human ancestors.

This is where I believe the greatest minds, artists, philosophers, teachers, and prophets of all times drew down their knowledge, breakthrough discoveries, insights, inventions, creations, hypothesis, formulas, wisdom, equations, theories and revelations.

This download, though oh so brief, stays with us consciously for a fleeting moment. If we awaken ourselves any more than this it is lost forever. But if we teach ourselves to journal immediately, talk to ourselves out loud to bring this data from the subconscious mind to the active mind; we can record it and utilize it. This is the link to the Akashic field, the memories of the Universe. ›››

This Akashic record or 'field of data' is also, I believe, the filmstrip, if you will, that is played out in our 3 dimensional world of form, of the holographic universe. It is not only in our dimension, but also in every conceivable and unconceivable dimension of space, time and existence within the visible and invisible universe.

Could the Akashic Record be what was tapped into for inspiration and what would seem divine knowledge for great minds such as Leonardo da Vinci, Albert Einstein, Nikola Tesla, Thomas Edison, Benjamin Frankland and Henry Ford?

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The Next Truth

Where Science and Myth Meet®

Volume 2 Issue 10

August 2020

Prof. Frank T. McAndrew
How the god you worship influences the ghosts you see

Dr. Seth Shostak
Arrival: Squid Pro Quo

A Dyson Sphere; Why Would Anyone Construct Such a Bizarre Monstrosity?

"I hadn't thought about the subject until I was already in the MoD."

Fromer MoD Employee, British Journalist and Media Commentator
Nick Pope
Weighs In on What or Who is Out There

For *The Next Truth magazine's* print-on-demand and digital issues, visit: **https://www.magcloud.com/browse/magazine/1512517**

For *The Next Truth website*, visit: **http://nexttruth.com/**

Seven Ways that Chemistry Puts the Magic Into Christmas

By Dr. Simon Cotton, www.birmingham.ac.uk

From the enticing aroma of the turkey in the oven to the "whoosh"' of the flames as the brandy-soaked pudding comes alight, Christmas is a wonderful time for the senses. But have you ever considered the science behind our best-loved festive traditions? Here are seven of my food and flammable favourites:

Candle light, shining bright

Candle-lit carol services are part of Christmas for many people, as are the ones entwined in holly on the table. Traditionally beeswax was used but while it gives great flames, it is rather expensive. Nowadays the vast majority of candles are made of paraffin wax obtained as one of the products of oil refining. These waxes are hydrocarbons, molecules made of two different elements: carbon and hydrogen.

When you light a candle, wax is melted, and the molten wax gets drawn up the wick, which gives a larger area for the wax to evaporate. It is the gaseous wax that burns, forming carbon dioxide and water, and giving out energy, which is where the heat and light come from.

But not all the carbon atoms get turned into carbon dioxide at one go – it is carbon-rich soot particles glowing hot that give out the yellow light that characterises a candle flame.

Turkey time

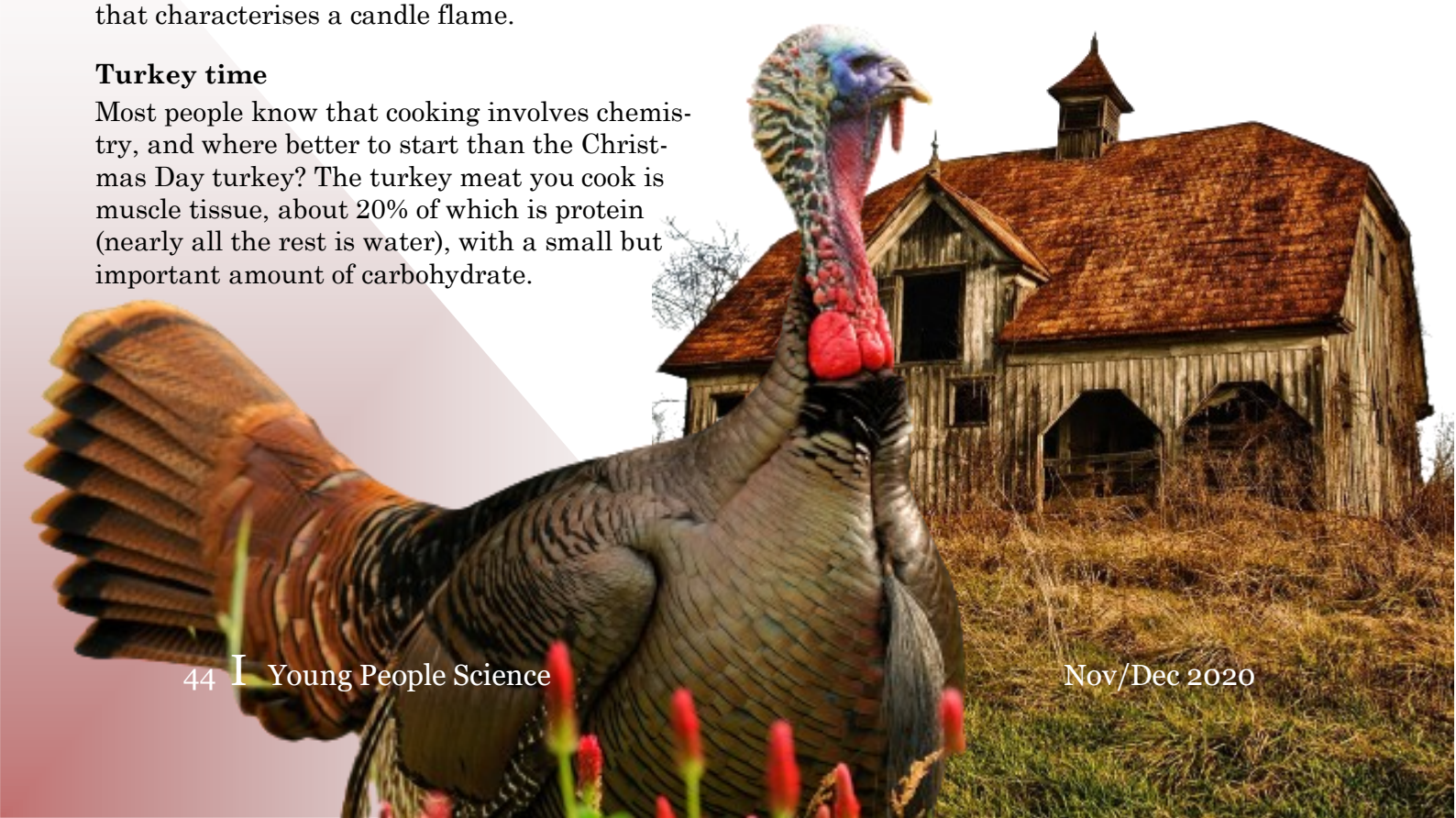
Most people know that cooking involves chemistry, and where better to start than the Christmas Day turkey? The turkey meat you cook is muscle tissue, about 20% of which is protein (nearly all the rest is water), with a small but important amount of carbohydrate.

If you "hang" the meat and allow it to age, enzyme catalysts naturally present in the muscle start to break down the proteins so that they lose their naturally rigid structure and the meat becomes more tender.

You can speed up the tenderising process by heating the meat, but above a certain temperature the enzymes stop working. This is why many chefs cook the turkey for a long time at a low temperature – if they just stuck it in a hot oven, the protein chains would tend to bunch together, which, coupled with the loss of water, results in tough and dry meat.

Simply cooking the meat at low temperatures wouldn't give the meat its brown colour and the wonderful smell and taste that go with roast turkey. This is down to a chemical reaction known as the Maillard reaction, which kicks in above 140° C. It's named after the discoverer, Louis Camille Maillard (that's Maillard, not mallard, which would be a duck, not a turkey).

Roast potatoes are cooked at a higher temperature than boiled potatoes – and traditionally in animal fat too – which allows Maillard reactions to occur, generating the smell and also the browning. ›››



Bitter sprouts: in the genes?

Around 40% of Brussels sprouts produced for the UK market are eaten in the weeks leading up to Christmas. And if you're one of those people who find Brussels sprouts bitter, there may well be a genetic reason for it. In 2006, scientists found that the presence of the TAS2R38 gene leads to a receptor that comes up with the "bitter" response when tasting Brussels sprouts and others in the brassica family. This bitter taste is down to compounds called glucosinolates, such as sinigrin, which are there for a reason: they help plants including Brussels sprouts, horseradish and mustard fend off insect predators.

It's not all bad, though, as scientists have also found that the glucosinolates in sprouts break down to give a molecule called sulforaphane, which has promise in fighting some cancers. So eat up those greens.

Oranges aren't the only fruit

Oranges are traditionally eaten at Christmas. The smell of orange peel comes from very small amounts of aldehydes, including the eight-carbon molecule octanal, which is slightly smaller than its brother aldehydes used to impart that amazing aroma to perfumes such as Chanel No 5.

More than 90% of the oil you get from the peel is made up of the hydrocarbon limonene, found in lots of other fruits such as lemons and grapefruit.

Because it's a hydrocarbon – slightly larger than the hydrocarbon molecules that make up petrol – it is rather flammable, so don't try squirting your orange oil at the candles on the table.

Pudding a la flambé

The more obviously flammable part of the Christmas meal is the Christmas pudding. Brandy is normally used to provide the fuel: ethanol. The ethanol molecule contains some oxygen, so it burns with a clear, hot, blue flame, unlike the hydrocarbons in candle wax, which give a yellow flame.

Over half the brandy is actually water, so some of the heat from the fire is used to evaporate the water, which stops the pudding from getting too hot and burning to a crisp, so it keeps that moist, chewable consistency.

Crackers, but not for the faint-hearted

And what about the crackers you pull at the meal? How do they work? Some crackers use a chemical called silver fulminate. It is a very shock-sensitive substance, a cousin of chemicals such as lead azide, used in detonators.

As you know, a cracker contains two long, narrow strips of card. One is painted with a tiny amount of silver fulminate, while the other is coated with an abrasive – a sandpaper-like material.

They are in contact with each other so that when the cracker is pulled, the two strips of card slide past each other and the friction from the abrasive detonates the silver fulminate. ›››

There is only a tiny amount – micrograms – of the silver fulminate: anymore and the "crack" would be a "kaboom!"

Do try this at home

Christmas trees are very flammable, for the same reasons that forest fires can spread quickly. One of the culprits is a molecule called pinene. As you'd guess from its name, it's found in pine trees and contributes to their special smell.

While it goes without saying that playing with fire should come with extra precautions, here's something involving pine cones you can try at home and which will put a bit of colour into your Christmas.

Make up solutions of different salts dissolved in water, such as copper sulphate solution (used to kill algae and available to buy online) or sodium chloride (common salt) solution. Soak the pine cones in one of these solutions overnight, then take them out and let them dry out. When you put them on top of a coal fire, they'll burn with a coloured flame: yellow for common salt, turquoise for copper sulphate – a taste of the chemistry-related magic of Christmas.

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This article was first published on the website of The Conversation, **www.theconversation.com**

Can you help the Alien find his ship

The Laws of Chemistry *(quiz)*

By Dr. Helen Fisher Ph.D. www.newwordpress.helenfisher.com

"Whom you are most attracted to reflects the biology of your brain as much as the heat of your heart. It may not have to do with us—it's all about the kids."

"We don't fall in love with just anyone. We have deep and idiosyncratic preferences. Why do we fall in love with one person rather than another?"

In addition to the article of Dr. Helen Fisher, "The Laws of Chemistry" which can be read on page 20 of this edition, you can take this quiz and see which type you are.

To Score

Strongly Disagree = 1 (point)
Disagree = 2
Agree = 3
Strongly Agree = 4

Answer all questions by placing an X in the column that best represents you. Add up the number of points in each of the four sections: 1-4; 5-8; 9-12; 13-16.

Questions 1-4 measure the degree to which you are an **EXPLORER.**
Questions 5-8 measure the degree to which you are a **BUILDER.**
Questions 9-12 measure the degree to which you are a **NEGOTIATOR.**
Questions 13-16 measure the degree to which you are a **DIRECTOR.**

The two highest numbers are your primary and secondary types.

1) *I find unpredictable situations exhilarating.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

2) *I do things on the spur of the moment.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

3) *I am always coming up with new ideas.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

4) *I have a very wide range of interests.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

5) *I make plans for things that will happen way down the road.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

6) *I place a high degree of importance on how other people view me.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

7) *In general, I think it is important to follow the rules.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

8) *I tend to be cautious, but not fearful.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

9) *I can see many different ways to solve a particular problem.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

10) *I am more intuitive than most people.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

11) *I change my mind easily.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

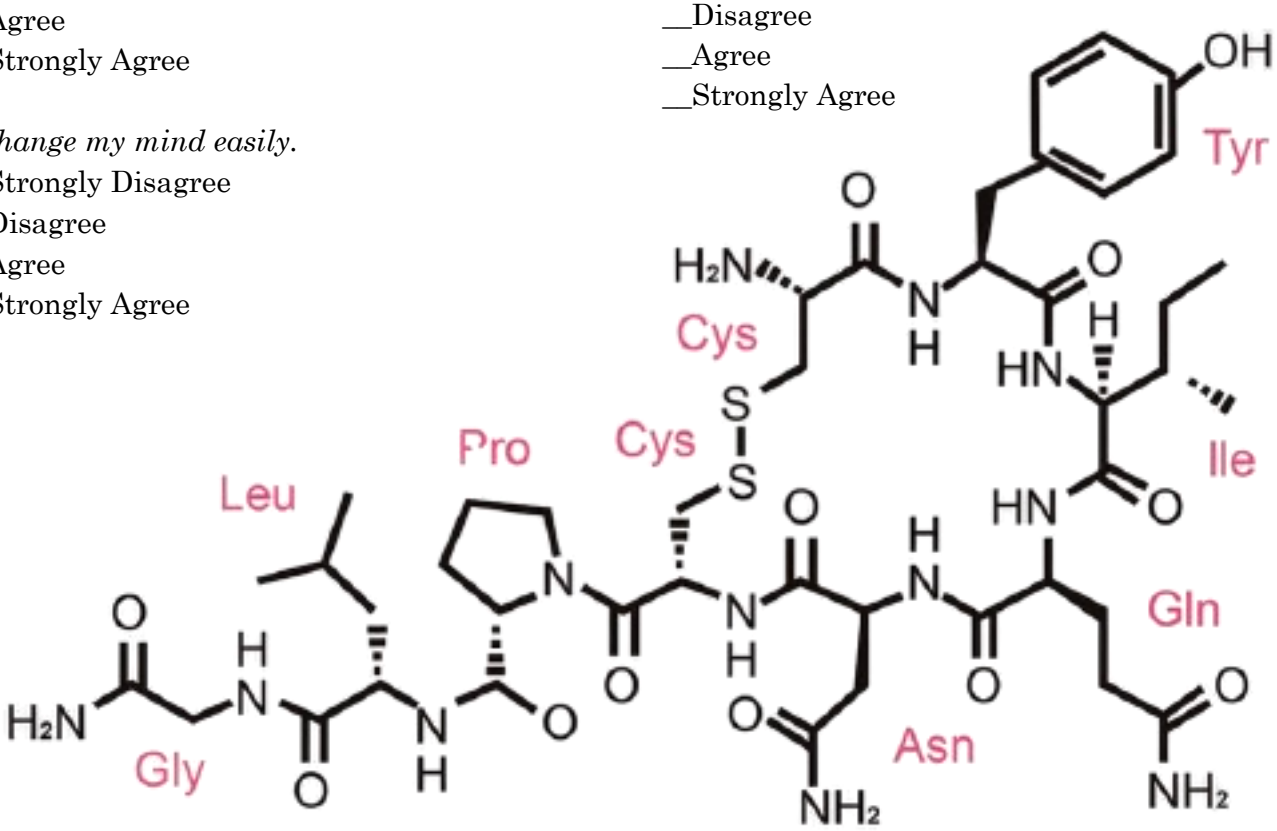
12) *I get uncomfortable when I see someone standing alone at a party.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

13) *I am very focused.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

15) *I think it is more important to do a good job than to have people like me.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

16) *It takes a lot of evidence to make me change my mind on most issues.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree

17) *I like to cut through the uncertainties to get to the point.*
__Strongly Disagree
__Disagree
__Agree
__Strongly Agree



As the holiday season is upon us, we find ourselves reflecting on the past year.

Our thoughts turn gratefully to those who have made The Next Truth's success possible. It is in this spirit we would like to express our sincerest appreciation to those who have helped us shape the magazine and make it global.

Thank you for your support and the trust you have placed in us.

The team of The Next Truth wishes you peace, joy and prosperity throughout the coming year.