Goethals News

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In Amazement at God's Design

The Jesuit contribution in the establishment of St Xavier's College and its nurturing over the last 155 years as an incubator for the fostering of excellence and an unending quest for knowledge is well acknowledged and documented. In the words of a fellow Jesuit **Pierre Teilhard de Chardin,** "The day will come when, after harnessing the ether, the winds, the tides, gravitation, we shall harness for God the energies of love. And, on that day, for the second time in the history of the world, man will have discovered fire."

Jesuit Education enkindles the fire within the students through some extremely commendable efforts in the realm of spiritual uplift through the pursuit of academics. Spirituality is an area that has not received the kind of illumination that it rightly deserved. St. Xavier's College, through successive generations of Jesuit Fathers, continues to give this inner awakening that "We are not human beings on a spiritual journey, but spiritual beings on human journey." The Course on Science and Religion for the second consecutive year by **Prof. Aleksandar Zecevic**, from Santa Clara University, California, assisted to achieve this new awakening.

It is my honour and privilege to be penning these words. As my heart is filled with pride, I wonder in amazement at God's design and the dedicated lives, that have tirelessly striven to give it meaning and shape.

Together with **Prof. Zecevic, Fr. Xavier Savarimuthu, SJ**, has compiled the thoughts of some of the most knowledgeable minds in the realm over the next couple of pages. I am sure that the pieces will give you as much pleasure as you go through them as we derived while compiling this issue.

Good reading and God Bless,

Dr. J. Felix Raj, SJ.

Director

Science and Religion-To Build Intellectual bridges between Gospel and Culture

Dr. S. Xavier, SJ, HOD, Dep. of Environmental Studies, SXC, Kolkata.

Bringing out a special annual issue on Science and Religion was conceived on a summer day in 2012, when we organised a one-day seminar on Science and Religion, the first of its kind within the hallowed portals of the St. Xavier's College, Kolkata. It was a lot more than an academic discourse or a spiritual event: for it marked the beginning of a foray, an effort aimed at stretching the horizons of our consciousness, in keeping with the emerging global trends. Since 2013, St. Xavier's College, in collaboration with Santa Clara University, California, founded a two-credit course on Science and religion. This year there were 22 students who registered for this course and 19 of them completed their final assignment and five of the best papers have been selected for the publication in this issue of Goethals News.

In the words of Sir Julian Sorell Huxley, "By writing, man has been able to put something of himself beyond death... A row of black marks on a page can move a man to tears, though the bones of him that wrote it are long ago crumbled to dust." Students, who went through this ineffable experience during this course, have put together in words. They are **Rhitaja Sengupta** (A Tryst with Miracles: Through the Eyes of Science), **Purbita Saha** (Science and Religion: The Conversation Continues), **Shanaz Afruza** (Limits of Knowledge), **Rohit Sen** (The Divine Conundrum) and **Kuheli Dasgupta** (Science and Religion: A Path of Confluence or Antithesis?) respectively.

Fr. Adolfo Nicolás, the Superior General of the Society of Jesus, issued the following challenge to Jesuit universities across the world: "As secularism and fundamentalism spread globally, our universities are called to find new ways of creatively renewing this commitment to a dialogue between faith and culture that has always been a distinguishing mark of Jesuit learned ministry…Can Jesuit universities today, with energy and creativity, continue the legacy of Jesuit learned ministry and forge intellectual bridges between Gospel and culture, faith and reason, for the sake of the world and its great questions and problems?"

The Course on science and religion between Santa Clara and St. Xavier's is a small attempt to find answer to the above-mentioned dimensions.

A Tryst with Miracles : Through the Eyes of Science

Rhitaja Sengupta

Department of Physics, 2nd Year

"Let us begin our journey with a story. Not any story but the story of our past, the story describing our struggle to survive, the story of how we evolved from a Beast to Man. This is a story known to all. In the beginning, we had no idea of what we were, how we were different from other animals, what our past was, how to survive the present, and what awaits us in the future. Man was frightened of his surroundings, of the natural phenomena like lightning, fire, etc. He prayed to God to show mercy, and thought this to be the only solution to his problems.

But slowly he gained knowledge – knowledge of his surroundings, knowledge of natural phenomena – and eventually his fear reduced. He started "inventing" things like weapons and tools for hunting which began to make his life a bit easier. Today, he not only knows about how to improve his present, but also has an idea of what his past was and where he is headed to. He has succeeded in understanding nature using some fairly simple ideas and rules.

But how has he achieved all this? Only through pure reason and intellect? Or through his faith in his Creator? Or both? The answer to this question is at the heart of the unending debate between science and religion. For some, science is superior to religion. For others, it is the other way around.

But what I personally feel and what I've learnt from Professor Zecevic's talks is that the key to Man's success is a combination of both.

As the title of my essay suggests, I want to examine miracles – which are considered to be a purely theological concept – from a scientific angle. And if I am successful in doing that, I may be able to somehow bridge the gap between these two different outlooks.

MIRACLES: I am a die-hard fan of Harry Potter books and the magical world of Hogwarts has always attracted me. I am a day-dreamer and I really don't feel ashamed to acknowledge that many times I've caught myself thinking that someday I am going to get my Hogwarts letter. Even at the age of 19, I still believe it's possible. And I think it's going to take a great deal of effort to convince me that this is impossible in real life.

On the other hand, I am also pursuing an undergraduate course in Physics – a subject that I love more than anything else because it has taught me to believe in nothing without checking its validity. So, it's kind of contradictory. Even though my studies have made me recognize the value of reasoning and logical thinking, I still believe in something that relies purely on imagination. My scientific intuition tells me that it is NONSENSE, but my heart wants and somewhere believes this to be TRUE. Even after years of learning science, some part of me wants to put aside all reasoning and rationality, and believe in something which gives pleasure to the child hidden inside of me.

I feel most people have encountered situations when they badly wanted to turn the IMPOSSIBLE into the POSSIBLE. They hoped that logic would fail and that something would happen which may not be explainable in terms of natural laws. But do these desires really fulfill us? Do such violations of basic logical principles actually happen in real life? Does nature surprise us by not conforming to general rules and following a different path instead? Well, my answer is going to be "YES"!!! In life there are many things that cannot be accounted for by pure logic. And these "non-accountable" instances are what we call **miracles**. They are a **reality**! In the words of Albert Einstein:

"There are only two ways to live your life. One is as though nothing is a miracle. The other is as though everything is a miracle."

MIRACLES THROUGH SCIENCE: Some of my readers may be familiar with the concept of Chaos. Those who are not can think of it as a fairly simple theory, which illustrates how the behavior of deterministic systems can be unpredictable in the long run.

A chaotic system has four characteristic properties:

1. A deterministic dynamical rule.
2. A periodic behaviour.
3. Bounded solutions.
4. A sensitive dependence on initial conditions.

The last point means that very small changes in the initial condition can produce large deviations in the final results. So an error of, say, 0.000001% can have a significant impact in the long term, making all such predictions useless. This sensitivity to initial conditions is popularly known as the *"Butterfly Effect"*.

But how do we relate this to miracles? Well, what if miracles are actually not violations of natural laws, and are simply the consequences of something like the Butterfly Effect? What if somehow somewhere a minute perturbation caused a barely detectable change to occur, which eventually triggered a drastic change that we view as a miracle? So, for those realists to whom miracles are only a myth, we now have a plausible explanation of how science can sometimes fail to predict the course of natural phenomena.

CONCLUSION: Both logic and faith are the basis of our existence and survival. Without logic, we are in darkness. Without faith, we are arrogant. In the words of theologian St. Thomas Aquinas:

"To one who has faith, no explanation is necessary. To one without faith, no explanation is possible."

Phenomena that science explains today using the language of mathematics seem to have been implied in religious texts thousands of years ago. At the time, people just believed in them, but now we see their proof. For me, religion gives us a direction to search for truth and science is the torch which illuminates the path. The two are inseparable, and yet so different in practice. ■

Science and Religion:
The Conversation Continues

Purbita Saha

PG Department of Biotechnology, 2nd Year

"Science is not only compatible with spirituality; it is a profound source of spirituality. When we recognize our place in an immensity of light years in the passage of ages, when we grasp the intricacy, beauty and subtlety of life, then that soaring feeling, that sense of elation and humility combined, is surely spiritual. So are our emotions in the presence of great art or music or literature or acts of exemplary selfless courage such as those of Mohandas Gandhi or Martin Luther King, Jr. The notion that science and spirituality are somehow mutually exclusive does a disservice to both."

Carl Sagan

It is inquisitiveness that best defines what we humans are all about. We ask endless questions, the answers to which often beg still further questions. But we continue to enquire. From the darting, curious eyes of a new-born to a growing child's persistent questioning of "Why is that? How? What? When?", we embark on a life time's search to make sense of the world we live in. More often than not, it is the questions we ask that matter most – the better the question, the closer we get to finding the truth. These queries and the search for answers constitute our knowledge. And knowledge is acquired most readily when we have open minds, free of shackles. It is a lot like when we break free from our mundane routine and go on a trip, which gives us pleasure because we are able to meander, to set off with a general goal or destination, but with plenty of opportunities to stop on the way and explore alternative routes.

I have always believed that science and religion are quite compatible, and that they often complement each other. But why, then, are they always at loggerheads with each other? Based on the scientific studies I had pursued, I became somewhat biased towards science. It seemed that science had the upper hand, and I failed to see what religion could

contribute. But I also didn't understand why science couldn't live at peace with religion. This course was quite a journey for me – it lent clarity and a proper direction to my thoughts, and gave me a better perspective about both science and religion.

Science endeavours to know the unknown – but is this really possible? It is true that what is unknown today could very well be known tomorrow, but what about the *unknowable*? The universe seems to be haunted by such truths, so it would be wrong to claim that every answer lies in science. Religion, on the other hand, operates in an equally important but utterly different realm of human purposes, meanings and values – subjects that the factual domain of science may illuminate but can never resolve.

We often digress from the actual essence of religion, and confuse it with 'superstitions' and 'myths'. What people fail to realize is that although customs can vary, the core tenets of all religions and religious scriptures are compatible. To this I would add that being a believer does not make one less rational. If a student fools around throughout the year barely studying and 'believes' that "God is there, I'll be fine and get through with my examinations" – well, you can guess the consequences! But as long as we do not permit faith to override our rational powers, it can help us explore the frontiers that lie at the outer limits of scientific investigation.

"In my view there is no conflict in being a rigorous scientist and a person who believes in a God who takes a personal interest in each one of us. Science's domain is to explore nature. God's domain is the spiritual world, a realm not possible to explore with tools and language of science. It must be examined with the heart, the mind and the soul."

--- Francis Collins, Director of the Human Genome Project

"Our scientific understanding of the universe… provide for those who believe in God a marvellous opportunity to reflect upon their beliefs."

--- Father George Coyne

A principal source of contention for many religious believers today is the scientific notion that the universe is largely, if not exclusively, governed by natural laws. Many believe that such a notion utterly negates any possibility of a supernatural being, and is thus tantamount to a declaration of atheism. The prevailing view among scientists is that miracles are events that violate the Laws of Nature, and are therefore impossible. True enough, it is very difficult to give a sound scientific explanation for the occurrence of such phenomena. But should we rule them out completely? If God has actually created this world and formulated the Laws of Nature, then why would he violate them? Is God so fickle-minded to fiddle with his own creations? In the words of Anglican theologian Keith Ward:

"Why should God make a set of beautiful and elegant laws, only to break them when the Divine Being felt like it? Does this not make God some sort of mathematical criminal?"

To me, this appears to be a paradox: science provides us with Laws of Nature, but not real explanations. Why do these laws exist, and when did they come into being? Our understanding of these laws is at best imperfect, so how can we be sure that we have seen it all? Taking everything into account, how can we say so confidently that God is violating the laws that He created, and rule out the possibility that unusual events may be part of the law? It is like interpreting a painting: what an observer concludes from it needn't be identical to what the painter had in mind, since he can only deduce only what his understanding allows.

It cannot be denied that miracles are be falsifiable – what seemed to be a miracle centuries ago might be viewed as a natural phenomenon today. Restoring vision to the blind, for example, has long been considered a quintessential biblical miracle, utterly beyond the capability and scopes of medical science. Yet numerous people today undergo corrective eye surgery, who otherwise would be blind by any reasonable definition of the term. Researchers at University of California, Los Angles, have succeeded in transferring a gene that makes a photosensitive protein in mice enabling better vision in treated blind mice as compared to untreated ones. But is it not miraculous in itself that scientists have been able to come up with such remarkable treatments? ■

Humours in Science and Religion

Dr. Xavier Savarimuthu, SJ.

I am sure after going through the pages on the issues of science and religion, you are feeling quite heavy. I thought of refreshing your mind before you move on to the next set of articles; there fore I have named this article as " Humours in Science and Religion". They correspond to various dimensions of our lives and so I am presenting them here for your humorous reading.

A Theory of Creation

God created the **mule**, and told him, "You will be mule, working constantly from dusk to dawn, carrying heavy loads on your back. You will eat grass and lack intelligence. You will live for 50 years."

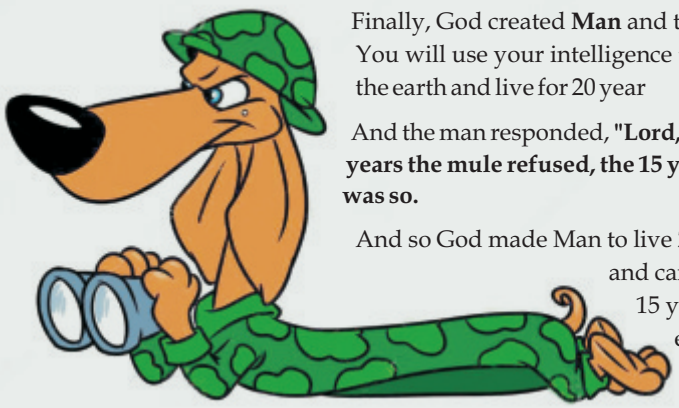
The mule answered, "To live like this for 50 years is too much. Please, give me no more than 20." And it was so.

Then God created the **dog**, and told him, "You will hold vigilance over the dwellings of Man, to whom you will be his greatest companion. You will eat his table scraps and live for 25 years."

And the dog responded, "Lord, to live 25 years as a dog like that is too much. Please, no more than 10 years." And it was so.

God then created the **monkey**, and told him, "You are monkey. You shall swing from tree to tree, acting like an idiot. You will be funny, and you shall live for 20 years."

And the monkey responded, "Lord, to live 20 years as the clown of the world is too much. Please, Lord, give me no more than 10 years." And it was so.



Finally, God created **Man** and told him, "You are Man, the only rational being that walks the earth. You will use your intelligence to have mastery over the creatures of the world. You will dominate the earth and live for 20 year

And the man responded, **"Lord, to be Man for only 20 years is too little. Please, Lord, give me the 30 years the mule refused, the 15 years the dog refused, and the 10 years the monkey rejected." And it was so.**

And so God made Man to live 20 years as a man, then marry and live 30 years like a mule working and carrying heavy loads on his back. Then, he is to have children and live 15 years as a dog, guarding his house and eating the leftovers after they empty the pantry; Then, in his old age, to live 10 years as a monkey, acting like a clown to amuse his grand children.

Life Explained… by an MBA graduate

A boat docked in a tiny Mexican fishing village. A tourist complimented the local fishermen on the quality of their fish and asked how long it took him to catch them.

"Not very long." they answered in unison.

"Why didn't you stay out longer and catch more?"

The fishermen explained that their small catches were sufficient to meet their needs and those of their families.

"But what do you do with the rest of your time?"

"We sleep late, fish a little, play with our children, and take siestas with our wives. In the evenings, we go into the village to see our friends, have a few drinks, play the guitar, and sing a few songs. We have a full life."

The tourist interrupted, "I have an MBA from Harvard and I can help you! You should start by fishing longer every day. You can then sell the extra fish you catch. With the extra revenue, you can buy a bigger boat."

"And after that?"

"With the extra money the larger boat will bring, you can buy a second one and a third one and so on until you have an entire fleet of trawlers. Instead of selling your fish to a middle man, you can then negotiate directly with the processing plants and maybe even open your own plant. You can then leave this little village and move to Mexico City, Los Angeles, or even New York City! From there you

can direct your huge new enterprise."

"How long would that take?"

"Twenty, perhaps twenty-five years." replied the tourist.

"And after that?"

"Afterwards? Well my friend, that's when it gets really interesting," answered the tourist, laughing, "When your business gets really big, you can start buying and selling stocks and make millions!"

"Millions? Really? And after that?" asked the fishermen.

"After that you'll be able to retire, live in a tiny village near the coast, sleep late, play with your children, catch a few fish, take a siesta with your wife and spend your evenings drinking and enjoying your friends."

"We're doing that NOW " they answered in unison.

IT-Consultant and a Cowboy

A cowboy named Bud was overseeing his herd in a remote mountainous pasture in California when suddenly a brand-new BMW 7 Series advanced out of a dust cloud towards him. The driver, a young man in a Brioni suit, Gucci shoes, Cartier sunglasses and YSL tie, leans out the window and asks the cowboy, 'If I tell you exactly how many cows and calves you have in your herd, Will you give me a calf?'

Bud looks at the man, obviously a yuppie, then looks at his peacefully grazing herd and calmly answers, 'Sure, Why not?'

The yuppie parks his car, whips out his HP notebook computer, connects it to his latest smart (cell) phone, and surfs to a NASA page on the Internet, where he calls up a GPS satellite to get an exact fix on his location which he then feeds to another NASA satellite that scans the area in an ultra-high-resolution photo.

The young man then opens the digital photo in Adobe Photoshop and exports it to an image processing facility in Hamburg, Germany. Within seconds, he receives an email on his Palm Pilot that the image has been processed and the data stored. He then accesses a MS-SQL database through an ODBC connected Excel spreadsheet with email on his Blackberry and, after a few minutes, receives a response. Finally, he prints out a full-color, 150-page report on his hi-Tech Miniaturized HP LaserJet printer and finally turns to the cowboy and says, 'You have exactly 1,586 cows and calves.

'That's right. Well, I guess you can take one of my calves,' says Bud.

He watches the young man select one of the animals and looks on amused as the young man stuffs it into the trunk of his car.

Then the Bud says to the young man, 'Hey, if I can tell you exactly what your business is, will you give me back my calf?'

The young man thinks about it for a second and then says, 'Okay, why not?'

'You're an IT Consultant', says Bud.

'Wow! That's correct,' says the yuppie, 'but how did you guess that?'

'No guessing required.' answered the cowboy. 'You showed up here even though nobody called you; you want to get paid for an answer I already knew, to a question I never asked. You tried to show me how much smarter than me you are; and you don't know a thing about cows...**this is a herd of sheep…'**

"Now give me back my dog".

God's Plan Over Human Unworthiness

When people saw a barren woman in Sarah, God saw the mother of all nations.
When people saw a poor young shepherd in David, God saw a mighty king of Israel.
When people saw a poor prisoner in Joseph, God saw a powerful Prime Minister of Egypt.
So never mind what people see in you. You are special to God and great in His eyes.

Limits of Knowledge

Shanaz Afruza

PG Department of Biotechnology, 2nd Year

"As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality." *Albert Einstein*

When I was may be 8 or 10, I remember my father telling me stories of the great prophets and *Jinn's*. These to me were like any other fairy tale, but there was something very fundamental about these stories which suggested that "God created Man". Almost everyone I knew, big or small, seemed to know this and hence I grew up accepting it is as a fundamental truth (synonymous to fact) . But eventually I reached that point of life when most of us start wondering, "Okay, so God created Man, but why did God create Man?" From that point on there are two roads to choose from – either to seek and believe, or to just believe what you have been told. There are two fundamental fields which offer answers to these questions, namely, theology and science. I have based this essay on science, and more specifically on Chaos Theory and its implications.

Since its inception, science has relied on predictability and order. The true beauty of science was its uncanny ability to find patterns and regularity in seemingly random systems. For centuries physicists used the concept of linearity to

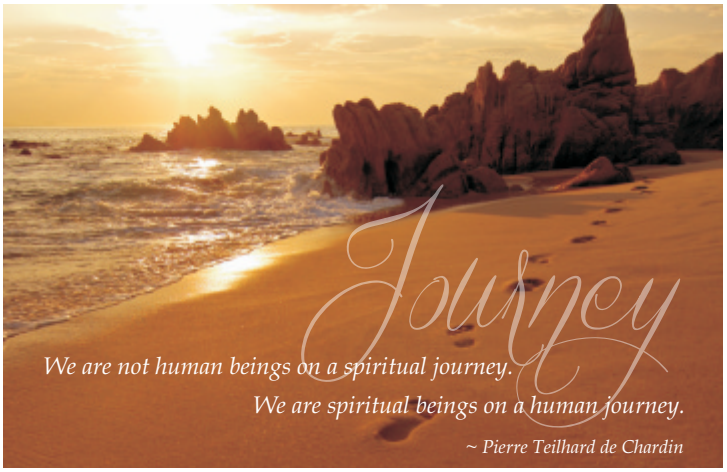
describe natural phenomena, and their theories illustrated the magnificent order which the world obeyed. If there was a God, he seemed to be a true mathematician.

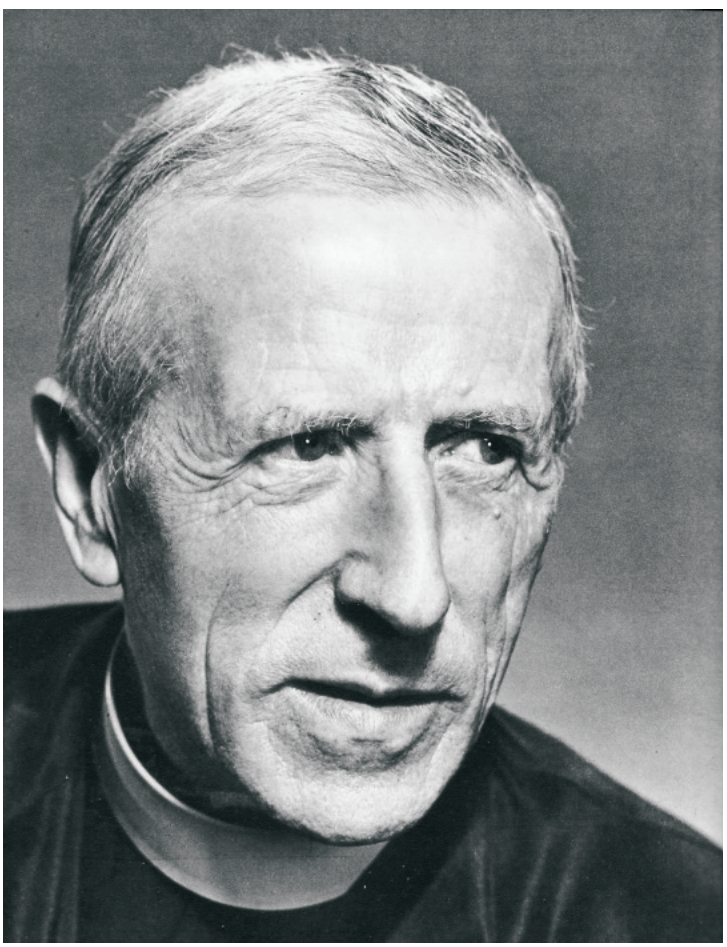
Although classical physics was able to successfully explain many processes in the natural world, it relied too much on the notion of linearity. As Benoit Mandlebrot correctly observed: "Clouds are not spheres, mountains are not cones, bark is not smooth, nor does lightning travel in a straight line." In the 20th century, a new science and a new kind of mathematics were developed to deal with such "irregular" objects and processes. This new amalgam of mathematics and physics was able to relate the kind of order that is exhibited by linear systems to phenomena that are essentially unpredictable (chaos theory is a typical example). But what exactly is chaos theory? The essence of this theory is the interpenetration of determinacy and randomness, order and disorder. Chaos admits surprising degrees of order, and yet it shows that a simple deterministic process can generate complex, unpredictable results.

One of the most interesting issues in the study of chaotic systems is whether or not the presence of chaos can actually produce ordered structures and patterns on a larger scale. It has been found that the presence of chaos may actually be necessary for larger scale physical patterns, such as mountains and galaxies, to arise. The reason physicists didn't study this phenomenon earlier is because the computer acts as our "telescope" when studying such processes. They didn't have computers or anything that could carry out extremely complex calculations in a reasonable amount of time. Now, thanks to computers, we understand chaos a little bit more each and every day.

Chaos theory has led me to the understanding that not everything in this universe is conceivable using science alone. Science has its limitations, and even though scientists claim they can predict things that occur in far off galaxies, these predictions needn't necessarily be true. This realization has paved the way in my thoughts for the possibilities of a more logical analysis of religious claims and events, which hold a very fair chance of being true, even though they might seem bizarre or unbelievable.

My experience throughout this course has been a rather enriching one, from day one transforming my views and ideas on the existence of "God" and the relationship between science and religion. Living in a country like ours, which is so diverse and rich in its cultural and religious heritage, it is difficult to keep yourself away from the essential questions of faith. Under such conditions, there is nothing wrong with doubting one's own religious beliefs, and speculating about them. Our minds are the only space where we can enjoy uninterrupted freedom, the freedom of thought. However, it is also important to strive for a greater truth so as to stably look at life with a clear perspective. This is exactly what this course has offered me. A deeper and more accurate understanding of the existence of a greater truth.





Pierre Teilhard de Chardin

I would like to end with a quote by Albert Einstein :

"Intelligence makes clear to us the interrelationship of means and ends. But mere thinking cannot give us a sense of the ultimate and fundamental ends. To make clear these fundamental ends and valuations and to set them fast in the emotional life of the individual, seems to me precisely the most important function which religion has to form in the social life of man." ■

The Divine Conundrum

Rohit Sen

Department of Economics, 2nd Year

"Everyone who is seriously involved in the pursuit of science becomes convinced that a spirit is manifest in the laws of the universe - a spirit vastly superior to that of man, and one in the face of which we with our modest powers must feel humble." – Albert Einstein

When I first found out about this course I thought its name was quite ironical. Science and Religion? We generally perceive the two as totally different avenues of inquiry, and history proves that there has always been conflict between them. Now the question that occurred to me quite naturally is can we really associate the two? As a child I learned what I was told – that there is a supreme entity, who is always looking after everyone. However, as I entered my teens, I became more and more hungry for the truth. Gradually, through experiences I convinced myself into believing that there isn't really any such thing as a 'divine' being and that we are purely guided by the laws of nature. But there was still a small part of my brain which constantly kept bugging me, indicating clearly that I cannot outright reject the concept of divine existence just because I have not had any such experiences. Thus, to feed my curiosity and with a view to learn something new, I enrolled in this course. So did this course really change my mindset and show me a better path? Let's see what I have learned.

A typical conception among educated people is that science is something that can be linked with 'truth'. There is no reason whatsoever to believe otherwise. But is science really free from flaws, or are there instances in the field itself that might be beyond the reach of man? If it is the 'truth' that we are looking for, then we also have to understand our limitations. In order to do this, it is crucial to understand the difference between the 'unknown' and the 'unknowable'. It may sound peculiar, but 'unknowable' truths are actually an integral part of science. For example in quantum mechanics, Schrödinger's equation gives us values in terms of probabilities, and fails to give any concrete predictions. Heisenberg's Uncertainty principle implies that we cannot simultaneously find out the position and momentum of a particle. So 'unknowable' truths are indeed a part and parcel of science. Chaos Theory, String Theory, General Relativity, Cosmology are all filled with such truths, which leads us to conclude that science allows for the existence of 'mysteries'.

In primitive times man was like a lost creature awestruck by the mysteries of nature. Unable to explain such occurrences he began fearing them and eventually started worshipping abstract things that he could not comprehend properly (like air, water and thunder, for example). So man did what he is best at doing – he started using his imagination, and eventually pictured these forces as beings with human characteristics. But is religion only about worshipping idols and performing worldly rituals, or is there more to it? To be honest, earlier I would often refrain from thinking more about religion because whenever I tried to explore it I failed to find a good starting point. All I could gather were religious practices and stories, which kept intervening with my process of logical reasoning.

The true meaning of religion to me now is something much more than these exercises. To me religion is faith, love and hope, with God as its symbol. Faith entails uncertainty – we believe in something only when we are not sure about whether or not it is true. Faith is also voluntary – no one can force you to believe if you choose not to. So having faith is perhaps the most important prerequisite for accepting greater truths that are practically unknowable. Love, on the other hand, brings out the beauty in man. Love signifies freedom, assurance and creativity – it is what connects the immaterial with the tangible.

So what is my current stand on the existence of God? Well for that I would definitely want to go back to the lecture on religious pluralism where we discussed the views of British theologian and philosopher John Harwood Hick. According to Hick, knowledge of God and religious truth claims are historically and culturally influenced. In my opinion, Hick was right about thinking of scriptural stories as metaphors, because people can learn a great deal from them and can improve their mindset and behavior. These stories may be false, but it would not really matter as long as they can point us in the right direction. I feel that the question of God's existence is not as important as the "greater truth" which nurtures us in rational, subconscious and emotional terms. Having said that, however, I cannot outright reject the possibility that there may actually be a God – just because we cannot contemplate him does not mean that he does not exist. What we are giving a human shape might be something totally different. Maybe it is always around us, but we cannot observe it due to the limitations of our senses.

What do I think about Science and Religion? Well, to start with, we see that both science and religion accept the reality of unknowable truths and mysteries. Their fundamental ideas and processes may seem different, but both try to serve the same purpose – the holistic development of mankind. In modern times, humans have often failed to recognize that science and religion are essentially two sides of the same coin, but there have been exceptions. Several scientists have acknowledged the importance of religion and have made efforts to justify religious ideas with the help of science. Over this course I understood that Science and Religion go hand in hand – Religion is as important as science. But the most important thing that I learnt is that we should know our limits, yet have the curiosity to explore further. A divine entity might exist but we should understand that its essence is beyond our reach. The small part of my brain that kept bugging me about divine existence now covers a greater volume. This course has opened new frontiers for me and has taught me to analyze things carefully, as well as to appreciate all possibilities instead of jumping to conclusions. ■

Science and Religion :
A Path of Confluence or Antithesis

Kuheli Dasgupta

PG Department of Biotechnology, 2nd Year

Is God a reality or a myth that exists only in people's minds? Is He someone who deftly sets into motion the workings of the Universe? Was this idea purposely planted into our minds so as to subdue our animal instincts, and be more than just another species competing for survival? Is He truly the One who gave form and purpose to the world, the heavens and beyond? These were some of my questions about the co-existence and complementarities of science and religion as we know them in our daily life. However, much has changed since then. After taking this course, I can see how science and religion merge to create a beautiful pattern.

"Its always good to have truth in one's opinions but it is also necessary to give room to doubt in one's speculations" – this is what my grandpa once told me when we sat for our customary evening discussions. These words had a profound impact on me and have always made me keep an open mind. My advancement in the study of science and an interest in religion seemed to complement and contradict each other at various instances, leaving me with a vague idea of both worlds and an ever-expanding bubble of confusion. This was sorted after I attended the course on science and religion. While I always believed that science and religion are two sides of the same coin, my rudimentary guesses were validated after I learnt about several questions wherein these two aspects complemented and balanced each other. My experience during this course was a fulfilling one as I walked into the classroom with a cloud of misconceptions hovering in my mind and after the course, walked out a person with a definite perspective, more flexible and tolerant ideologies.

"Gravity explains the motions of the planets, but it cannot explain who sets the planets in motion." In this wonderful quote Sir Isaac Newton very humbly puts forward the

limitations of science and points out that religion can act as a beacon that guides scientific thinking toward the discovery of higher truths. While gravity and its laws are scientific truths, their origins are yet to be determined. These laws were unknown until Newton discovered them, but their source is an unknowable truth, which begs the question of whether or not there is a Supreme Being.

Another topic which really fascinated me during this course was the idea of religious pluralism – a multi-faceted aspect of religion and its interpretation which in my opinion bears a striking resemblance to quantum mechanics and especially Einstein's Theory of Relativity. According to this view, which is quite contrary to the orthodox belief system that individual religions follow, multiple versions of a single truth can coexist. Each tradition offers valid arguments which are equally likely to be correct.

To see this more clearly, let us suppose that we have a group of kids who have been asked to draw on a sheet of paper the first thing that comes to their mind when we refer to a playground. While one of them may draw a swing, another may draw a see-saw and yet another may draw a football! All of them have individual ideas of what a playground means to them, with each proposing a different notion. However, none of them are entirely wrong and are basically viewing the same thing from a different perspective. In a similar way, the idea of religious pluralism allows some room for the different religions to co-exist in harmony.

A religion old or new, that stressed the magnificence of the universe as revealed by modern science, might be able to draw forth reserves of reverence and awe hardly tapped by the conventional faiths. Sooner or later such a religion will emerge. "Carl Sagan *Pale Blue Dot: a Vision of the Human Future in Space* (1994).

This quote suggests to me that science and religion can be allies if perceived in the right manner, and that they are potentially the best way that mankind has to grasp the infinite mysteries of the Universe. "Let no one enter here who does not have faith" was the inscription over the door on Max Plank's Laboratory. This serves as a perfect example of the holistic approach that one should follow while exploring the territories of science and religion. This course has indeed offered a wonderful insight into how these two worlds are juxtaposed with one another. ■

COURSE ON SCIENCE AND RELIGION (ENGR 343)

(SXC's International Exchange Program Initiative with Santa Clara University, California, USA)

Course Duration: January 6 - March 15, 2016 (30 hours)

Resource Person: Dr. Aleksandar Zecevic (azecevic@scu.edu)

Professor of Electrical Engineering & Associate Dean, School of Engineering, Santa Clara University, California, USA.

• One 2 hour lecture per week for a total of 10 weeks) = 20 hrs • Project Work Hours = 10 hrs
• Online Lectures will be Posted in You tube •Lectures at St. Xavier's College (Mid February of 2016)

Course Syllabus available at: http://www.engr.scu.edu/~azecevic/

Participants: • Faculty Members involved in teaching Foundational Courses • 4th Semester Students of Science (UG)
• 2nd Semester Students of Science (PG) • 6th and 8th Sem Students of Biotechnology (BMBT)

Registration: Last Date by 10th December 2015) | Contact Person: Fr. S. Xavier, SJ. (sxavi2005@gmail.com)

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St. Xavier's College, 30 Mother Teresa Sarani, Kolkata 700016, India.
Tel: 0091-33-22801919, Email: goethalscal@gmail.com, Website: www.goethals.in
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