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SAMPADA

Your window to UVCE

Edition

137

EDITORIAL

It's June 2021! Well, as I pen this editorial—the reality hits me hard that half a year has almost passed and soon before we know 2021 is over. Gosh! The past six months may have been shorter for some amidst the hustle and bustle of work from home behind those laptop screens, for some it may have been longer with all the incredible difficulties of offline businesses getting a hit and also with the whole country facing a sudden second wave! With every passing day and edition, we now only pray everyone is safe and sound with their family. Our heart extends to those who have had to suffer losses!

Speaking of pandemic, we all have definitely had to move online for pretty much everything. From work to recreation to shopping to education, we are online to keep most of it going and not just in a manageable way but creative-innovative ways too! Why do I say this you ask? Well, as the pandemic hit, students have had such an impact. We all know the joys of student life on campus—classes, labs, games, hanging out with friends and fests! Yes fests! What a major role they play in role - not just the ting of excitement in the air on the two days with all the amazing events and competitions lined up but also all the mountain of hard yet fun work that goes into by the student bodies. But 2020 saw UVCE miss that and definitely the students dd miss a huge part of their campus life with that. Although 2020 ended and 2021 started with a brink of hope, things didn't line up exactly. But namma UVCE students weren't ready to let go of it. So what's new? They brought the whole fest online! IMPETUS 2021 was held virtually on June 5th and 6th. Kudos to the team for the colossal effort in taking an offline event online. This not just made an impact for the students long stuck with online classes but also gave students across the country an opportunity to participate!

Adding to this line of offline events going online, coming soon on 26th June 2021 is UVCE Graduates' Association Annual General Body Meeting. After also being struck by the pandemic and hence leading to the first AGM not happening last year. The executive committee has pushed their efforts into moving the event online for their First ever AGM. The event is restricted to the UVCEGA members only and will see the briefing of the activities of UVCEGA and much more for the last two years. Details of which can be found in the next page. If you wish to get connected into the loop, get acquainted of the alumni activity information and work towards the participation in our Alma Mater's betterment, you can still register yourself as member before the AGM and attend (link).

On this discussion, as alumni— in our effort to doing our bit in helping our Alma Mater improve, it is so critical to maintain a relationship with the current students. Knowing them gives us a window into the needs, current happenings of UVCE and also we can help them by guiding, mentoring as make their step from student life to our alumni family soon and enter the career phase of their life. In an effort to connect our alumni and students better without making it more boring or too formal! We thought how about creating an event as platform for them to blend better and have fun too! Which is why we started a UVCE ChitChat—Maathukathe Series where namma alumni and students play fun games, talk about various topics and share thoughts. Do you believe they was magic show in one of our sessions? We have our team member and student coordinator Varsha speak more and give you a better glimpse inside this edition!

Also, we have had an amazing and interesting series on a detailed interview of Prof Roddam Narasimha Sir been going from past couple of editions. This month we have the fourth installment for you!

Before I sign off, I have one request - do let us know your thoughts on our editions. Your feedback makes our day and also helps us in getting better and better! Hope to hear from you at sampada@visionuvce.in

- Chitra S Reddy, Team Sampada

UVCE GRADUATES ASSOCIATION VIRTUAL AGM

We are glad to announce that we are conducting the First Annual General Meeting of UVCEGA on 26th June virtually. All the members would have received the Meeting Notice 21 days before (as per the Bylaw) via email along with the Google Meet Link. Please note that General Meeting is open for UVCEGA Members only.

UVCE GRADUATES ASSOCIATION

100/4, Bull Temple Road, Bangalore-19 | www.uvcega.org
Regn No: DRB2/SOR/18/2019-20

Notice for the General Meeting

The First General Meeting(AGM) of UVCE Graduates Association will be held on Saturday, 26th June, 2021 at 7PM IST virtually via Google Meet.

Agenda

- Welcome
- Condolence for departed souls of alumni
- Reading of Meeting Notice
- About UVCE Graduates Association and the reason for combined AGM for 2 years
- Presenting the Report of the Working of the Association for the years 2019-20 and 2020-21
- Presenting the Audited Financial Report (SoA) for the years 2019-20 and 2020-21
- Plan for the current year 2021-22
- Annual Budget for the year 2021-22
- Any other subject with the permission of the Chair
- Vote of Thanks

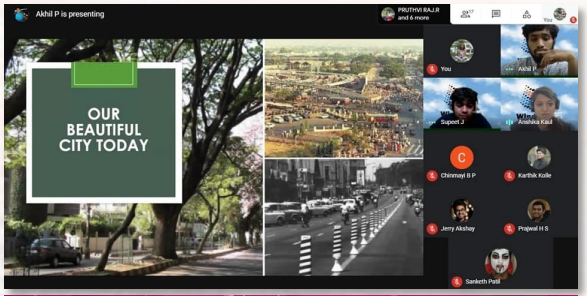
Dated: 5th June 2021 Secretary

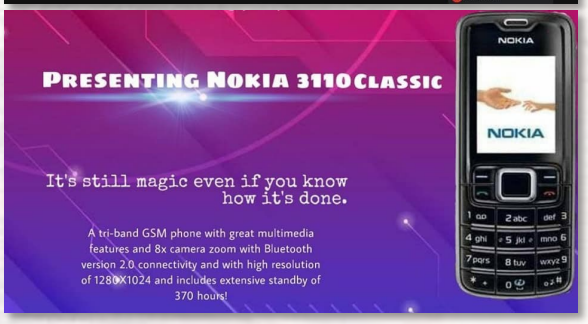
Note:

* General Meeting is open for UVCEGA Members only.
* Members can send their queries before 15th June (10 days in advance) via email to info@uvcega.org
* If you want to change your email-id/contact, let us know

IMPETUS 2021

In the last week of the first month of this year, a small group of final year students sat down, virtually together but physically in the safety of their homes, to pick up a project they had dropped midway due to the pandemic. Having just finished their penultimate semester examinations, and thus realising that it was the beginning of the end, they knew that resuming their beloved project at that point of time was necessary to keep traditions afloat. In the blink of an eye, with the numerous conversations, discussions, debates and meets that came about, the idea of accomplishing this project had infected the minds of everyone who called themselves team members of IEEE UVCE. Thus the festivities began, and the preparations were on track for what would be UVCE's first fest in more than a year. Word spread, excitement rose, enthusiasts emerged and assets were procured, only to be halted by the second wave of the pandemic.





It felt like the repeat of the previous year, but this time there was more resilience instilled in the team. Out of this adaptability came the idea of converting the whole fest into a virtual celebration of technology and human life. Approval was gained, plans were chalked out, timeline was made, and the dates were set. It did not take long for some of the young minds to adapt their already planned flagship events to online mode and for others to come up with top class virtual event ideas to embellish the fest. The spectacular designs, astounding videos, dedication of the volunteers and power of social media helped attract budding engineers from all across the country. A total of 1281 tickets were sold, and included a few registrations from outside the country, thus making IMPETUS 21.0 an international affair.

With the stakes set so high, the task was definitely not going to be simple. Sacrifices were made, pains were swallowed, tears were shed and meals were skipped, but every bit of it felt worth it. Some saw 3:00 AM for the first time, others clicked midnight photographs for the last time; some made meets their beds and pillows, others turned it into their dinner tables. Amidst all these struggles the virtual stage was set for the 5th of June. Beginning with a tribute to the COVID Warriors, the technical extravaganza started off on a high note. The 15 events conducted over 2 days saw scores of students come together and fight it out for glory in their fields of expertise. It all culminated with the valedictory, where many were joyous on their success and an equal many were inspired to strive harder to perform better in the future. But the mix of emotions that erupted in the virtual room after the stream had ended, portrayed the real story of UVCE's First Ever Virtual Fest - IMPETUS 2021.

- Kennith Koshy, 4th year ECE; Chairperson, IEEE UVCE

CAMPUS SAYS - IMPETUS 21.0

After a short stint of one and a half months in college, sitting with my peers, I was back to classes on zoom with my laptop. I was yearning to do something creative, interesting and volunteering for IMPETUS, checked all the boxes.

It amazed me, the kind of ideas, the amount of expertise, the organizational skills, the organizers exuded. Every event gave the participant an opportunity to learn something new and most importantly have fun! This definitely made the first task, promoting the events a tiny bit easier. The Instagram stories were abuzz with attractive posters explaining the events, referral codes (cause, goodies, duh!), I also added a few stickers and gifs to make them more noticeable. Later, I texted my friends from other colleges and my classmates encouraging them to take part. This gave me an opportunity to interact with a lot of my classmates and my seniors with whom I hadn't before. As we moved closer to the fest, we were allotted an event of our choice. On the day of the event right from a nervous laughter, constantly tracking the participant's progress, effectively communicating their doubts to the organizers, to the satisfied smile we shared as a team after the final round, over a stable internet connection is definitely an experience I would cherish for years to come!

- Samyuktha Sridhar, 1st year ISE

When you think of a big college fest, you'd probably think large crowds, people from across batches getting to know one another and the ringing exhilaration. Covid-19 squashed all expectations. Nonetheless, I was equally surprised when I found myself thoroughly enjoying the events through the online mode.

In the event I took part in, I realized just how invaluable a platform Impetus is. We all need one to show what we're made of and Impetus is literally that driving force that helps one draw out immaculate portraits of our cornered creativity – the creativity I know I have always come to doubt or dismiss. I saw Impetus as an opportunity. My fellow participants were versatile, speaking boldly in their presentations and putting forward intricate ideas to solve modern day crises. Observing this was eye-opening in a unique sense. With students from colleges like PESU and BMSCE also taking part, the competition felt all the more exciting. A big thanks to everyone who worked hard to propel Impetus forward into a success.

- M. Fouzan, 1st year ISE

"The Past that Never was" it was called and lived up-to the tagline.

When we decided to the conduct Impetus 21.0 online, there were a series of questions: How would we gather people and organize different events in 2 days without compromising the standards? Offline fests have a rough draft but now all we knew was the flow. With a lot of questions, and a lot more determination, the team set off to do it.

Google meet was our virtual IEEE room and our WhatsApp groups buzzed 24*7. Zooming in and out on screens shared on Zoom was a routine. The major challenge was campaigning, so we formed a marketing team to make creative short videos, Instagram reels and various online competitions. For better reach we used Facebook boost which helped promote IMPETUS all across the country. Instead of the quadrangle, a website called Townscript was used for more than 1200 registrations that we got!

Some of the events, including the opening and closing ceremonies were live streamed on our YouTube channel. As the theme was "Retro rewind" we included some vintage games for free like Super Mario, PAC-Man etc. With complete online planning and organizing, I'm proud to say that students who were new to this successfully organized Impetus 2021 – a virtual technical fest that never was!

- Rajat Lingadalli, 4th year ECE

REDISCOVERING THE JOY OF CURIOSITY

Spoorthy Raman is our alumnus from the batch of 2009 CSE. She is the Managing Editor at Research Matters since 2016. In her span of about three years as a science writer, she has written about a wide range of topics, based on research papers, interviews, features and events. She was the recipient of the EurekAlert! Fellowships for International Science Reporters 2019, and was awarded the 'Merit Prize' in the Asian Scientist Writing Prize, 2017. After her stint as a Software Engineer, she found that her passion lies in science writing and started her journey with Research Matters. Here are some thoughts penned by Spoorthy for Sampada:

We were told that *curiosity killed the cat*. I am not sure how many cats indeed died of curiosity, but there is little doubt that the trait played a significant role in human progress. Our ability to ask *why* and *how* has helped us wander away from the Olduvai Gorge in Tanzania, where our ancestors are known to have evolved, to the Moon and beyond. Curiosity is an innate trait for most intelligent lifeforms, including us humans, that helps explore the world around us. Babies mouthing their toys, dogs sniffing around, or even the famous squirrel snapped looking into a camera in the wild are all acts driven by curiosity. Our desire to know and learn has helped us cultivate crops that feed the world, wipe out some of the deadliest diseases like smallpox and measles, and understand how our Universe came into being. Of course, a dose of curiosity has also created a few troubles, which we are trying to solve with the same trait (think Climate Change).

Kids satisfy their thirst for knowledge by asking questions—the *Tell me why* books would not have existed if not for the relentless queries that parents get from their children! As kids grow, asking questions becomes increasingly hard; we assume education should provide most answers. Fast forward to being adults and asking stops for the most part. With its mundane chores, life takes over, and we all become *busy with nothing*—unless you have a career where being inquisitive and asking questions is what you are paid for! The sight of a blooming flower or a flying bird becomes humdrum rather than mindblowing. We end up with a brain that is seldom piqued by anything exciting.

Our approach to accessing information today is partly to be blamed for killing our innate curiosity. Instead of aimless browsing (which may turn up new information that we least expected), we seek what we want. We key in specific words on our browsers and read only the links thrown up by a search engine. This process is not a 'discovery' but a presumption that we *know* what we *want* and thus what we know encompasses our world. In reality, that is far from the truth. Doomscrolling our social media feeds is not helpful either as our circle of influence—friends and connections—think as we do and are inherently biased.

Studies show that we become pliable to misinformation when we resort to actively consuming information without exposing ourselves to new perspectives that could be gained by travelling, interacting with people unlike us, or browsing the library or a newspaper. There is no doubt that there is rampant misrepresentation of facts for political or social gains in our world today. Our hope as humans to navigate the tangled web of misinformation perhaps lies in rekindling our sense of curiosity—a trait we were all generously born with.

What if we asked more questions than we do? What if we developed a sceptical mind and quizzed the information around us? What if we were to write our own *Tell me whys?* Who knows what's there to be discovered in this journey of seeking and where it could take us! For a start, we can all begin with the five Ws and an H—*what, why, where, who, when* and *how!*

PROUD UVCEIANS

UVCEians all around the world are always shining bright and the list of achievements keep growing which is what makes us so proud of our UVCEian family!

Adding to this is the recent news of appointment of Rathi Murthy as the Chief Technology Officer and President of Expedia Services. She is our alumnus of Batch 1988 Electrical Engineering. Seen in the image is the congratulatory message for her from NASDAQ in Times Square, NYC, USA.

Team SAMPADA, on behalf of the UVCE family congratulates Rathi Murthy on her incredible feat!

We are really glad to have had a conversation with her a couple of months ago and published a relay interesting interview in Sampada 130 trying to know more about her journey and thoughts! If you missed it, here it is again:

Rathi Murthy is currently the Chief Technology Officer and President of Expedia Services. She was formerly the CTO for Verizon Media and is recognized as a transformative technology executive with deep experience and knowledge in platform environments at Fortune 500 e-commerce, financial services, telecommunications, and media companies. Most recently, Rathi managed innovations in 5G and the platform technology and infrastructure at Verizon Media. Rathi was also the Senior Vice President and CTO for Gap, Inc in the past. Rathi has held senior technology leadership roles at some of the world's best technology companies including American Express, eBay, Inc., Yahoo, Sun Microsystems and WebMD.

Team Sampada: We'd like to hear a quick introduction from you.

Rathi Murthy: After graduating from UVCE, I got married and came to the US to complete my Masters in Computer Engineering, in Santa Clara University. I started my career at Informix as a Software Engineer. During that time, I was influenced by several women leaders who showed me the path to lead teams effectively and gave me several opportunities to actually lead large projects early in my career. This paved the path for my passion of leading large and complex organizations and driving transformation. I pivoted into leadership roles pretty early in my career.

I have dabbled at both large companies and startups such as WebMD and Metreo Inc, where I was one of the first Tech leaders in the company. These experiences helped broaden my expertise across all aspects of technology including Engineering, Architecture, Network, Data Center Operations and Customer Service. I also learned how to run technology end to end, drive design thinking and innovation as part of the engineering culture.

Over the course of my career I have been very fortunate to have strong mentors, and sponsors who always taught me to dream big, demonstrated confidence in my capabilities and gave me the opportunities to try my hand at new things.

TS: You have been in this field for over a few decades now. Would you elaborate on that?

RM: Over the last 20 years, I have been fortunate enough to work at some large brand name companies. I have built a passion to lead and drive large scale transformation across People, Process, Tools and Technology. This has enabled me to build a brand for myself as a Digital transformation leader.

I have led technology and operations across several industries including Healthcare, eCommerce, FinTech, Retail and Media. This has allowed me to truly drive Business Transformation across several verticals by leveraging technology. My mantra in driving transformation has mostly been helping companies get Faster, Smarter, Better while staying secure. Prior to Gap, I was the CIO for Enterprise Growth at American Express, where I managed end-to-end platform technology, infrastructure and operations for the suite of American Express prepaid products. While at American Express, I was named Top Woman in Cloud Innovation in 2014, and Most Influential Women in Payments in 2015. Currently, as the CTO for Verizon Media, I am recognized as a transformative technology executive, and I oversee Verizon Media's global technology strategy, leading the company's continued innovations in 5G while also managing the platform technology and infrastructure.

TS: How has UVCE played a role in your career? How has it shaped your professional life?
RM: UVCE provided us with a broad engineering foundation that I could build on. It taught me to be resourceful and build confidence in myself. There were times when we didn't have professors show up to all our classes. This really made us all more resilient to adapting to situations. We all helped each other come up to speed with the basics and supported each other. This is a skill that has truly built the teamwork spirit that I continue to cherish.

I also found some of my best friends for life at UVCE. These friends have continued to motivate me and inspire me to be my best self at work.

TS: How are things in your field in the current scenario? What is the next big thing as per your knowledge in this domain?
RM: Our parent company Verizon is building the best-in-class 5G network, and 5G will have a massive impact on how we live, learn, work and play. 5G will usher in the fourth industrial revolution, paving the way for unprecedented innovations that will reshape the world. Autonomous cars, smart communities, the industrial Internet of Things (IoT), immersive education will all rely on 5G, and in terms of media, consumers can look forward to better, more immersive experiences.

Fueled by 5G, Verizon Media Immersive and our production house RYOT is powered by a team of content creators, producers and engineers. That is a unique combination and one we believe will be key to building and transforming future experiences for consumers.

At Verizon Media, 5G lets us animate experiences in real-time. The technology allows us to render actors' body movements, experiment with new XR formats, and integrate interactive backdrops for a more immersive entertainment environment, changing the way consumers can engage with their favorite artist, sports team and the issues that matter to them.

OBITUARY

With profound grief we inform you all of the sad demise of Dr.K NARAYANA MURTHY, Former Professor and Chairman, Department of Civil Engineering, UVCE on June 7th, 2021.

We at UVCEGA pray that his soul rests in peace and that his family finds the strength to bear this loss.

UVCE MAATHUKATHE

Samvaada to Chit chat to Maathukathe, this fun-filled weekend session took a lot of names but stayed the same in spirit!

It all started when UVCE Graduates Association took the initiative to organize one session on a Saturday to break the monotony of online classes and assignments. What ensued was 'Samvaada', with 25 odd people on a Google meet, chatting away about their interests. An excel sheet with lists of books, movies and courses was started for anyone to add on to.

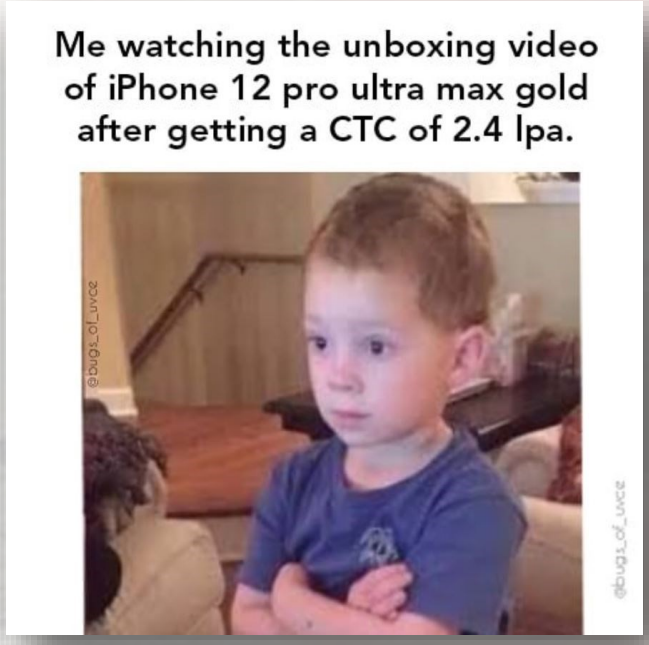
The next 2 weekends, students themselves took the initiative to have this session. In the process of playing engaging games like geoguessr, interactive polls, alumni became more and more involved. One of the sessions had a story telling session, and alumni revisited their favorite childhood magazines like Chandamama. A student even performed magic and stunned the audience across all age groups. Somewhere amidst all this, the session took the more apt name of "Chit Chat" and then "Maathukathe."

The last session happened on 12th June at 11am. With enthusiastic participation from students, faculty and alumni, the session took off with a captivating discussion about the old batches. Upgrading of the college to IIT level, exams in a scenario like this, the new 3-storeyed canteen, and the condition of labs were a few among the topics that were of interest.

In upcoming weekends, Maathukathe will continue to happen. All students, alumni and faculty of UVCE are more than welcome to join, chit chat, bring up concerns or even just listen.

- Varsha S Bhat
3rd year, ECE

BUGS OF UVCE (@BUGS_OF_UVCE)



ECELL UVCE

During this lockdown period, there are lot of opportunities for everyone to explore new areas and topics and understand the basic concepts. This is true for everyone - both students and alumni. And as always, things keep evolving so fast that it is difficult to keep pace with them. We need to make ourselves available for the opportunities when it presents itself. So, when Entrepreneurship Cell approached the UVCE Graduates Association with the idea of an "Online Session" on BlockChain Technology, it was unanimously agreed upon from our end. We were equally glad when they informed that the UVCEGA Members will be provided a special privilege—Concession Registration Fee. We felt it will definitely be appreciated by our members, as in the past few months we are not able to meet or conduct any events exclusively for them.

Here is what Karthik from Entrepreneurship Cell has to say about the event -

We had with us, Mr. Arun Maharajan, who's the product lead and director of growth at koinearth. He's an alumni of BITS Pilani and an interpreneur who was kind enough to take time out of his schedule to share his knowledge with the students of UVCE. The session was an insightful endeavor towards the implementation of blockchain technology in cryptocurrencies. Not only did we understand the revolutionary protocol behind these systems but also the true essence of tokens and how they mean much more than meets the eye. The reasons behind the popularity of distributed apps ie. Dapps were effectually explained by the speaker, who also compared these to the first telephone. His beliefs about the ushering of a new era due to the technology in discussion was something we all found fascinating. The event was organized by the Entrepreneurship Cell Team in collaboration with the UVCE Graduates Association and turned out to be highly beneficial to the students.

MILAGRO 2021

Milagro is the biggest inter-collegiate cultural spectacle of UVCE. Typically attracting a huge crowd for the two days it goes on for, this fest marks the end of the even semester. Adapting to changing times, Milagro 2021 will take place virtually, tentatively in the first week of July. Open to all college students like usual, and this time, some open to the alumni of UVCE as well!

In order to make this virtual cultural fest memorable, we are looking for sponsors. As someone who was a part of this legacy, alumni are most welcome to pitch in and contribute towards this, as an individual, from the whole batch, or from the company!

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- Team Adhamya

AAKAASHA RAYA (CONT..)

During our research about Prof Roddam Narasimha Sir, we found a lot of inspirational contet. One of the interesting articles we found, was an interview of Dr. Roddam Narasimha named -'Aakaasha Raya' done in January 2017 by editors at **Bhāvanā.** We are publishing the excerpt of this interview as a series and this is the fourth part in continuation. The link to the complete interview: PART 1 ; PART 2

There's something you said about Aryabhata which just struck me. You mentioned that when Aryabhata reasoned that the Earth must be round, that the eclipses are not caused by Rahu and Ketu, he came up with an inference which we know today to be true—that the Earth is round. On the other hand, for instance, there was Aristarchus who, starting from axioms, proved that the moon is half the size of the Earth. What led Aristarchus to an erroneous inference?

RN: Ah, right, that's the deeper question. The Greeks of course were greatly influenced by Aristotle. They think questions have a specific answer—either yes or no—with no other options, that the world is binary, in some sense, and that the way to obtain knowledge is through the axiomatic system which basically goes back to Euclid. You make a small number of axioms, and you deduce truths as consequences from there, by the kind of logic which Euclid and Aristotle made permanently Greek, so to speak. If you asked an Indian philosopher why he is not doing it that way, he would say: "How do you know that the axioms are true? Where did you get the axioms from?" So you've already decided that in this universe there are some things that are self-evidently true and are revealed to you somehow—I don't know how—and then there are others which are consequences. He would doubt your axioms—how are you sure about your axioms? Even Neelakantha makes a statement somewhat like that: How do you make hypotheses, how do you make axioms? The Greeks, however, were so fascinated by what Euclid did—and it is fascinating, I must say; when I went to school I was also fascinated by what Euclid did. I didn't realize these were all big things which had been argued endlessly long ago for centuries—it's amazing. This guy [Euclid] makes only these five statements, and he said he proves all these things.

So, when you look at the Greeks, it almost became, as we say in computer science, garbage in, garbage out. You make your axioms, you get your conclusions. But if your axioms are garbage, your conclusions are garbage too. And because proof by the axiomatic method became so fashionable, people began to make all kinds of funny axioms and came to all kinds of funny conclusions, which you normally don't see in accounts of Greek history. Now, I first discovered them in a book about Babylonian astronomy which Otto Eduard Neugebauer wrote.9 He's written about Babylonian mathematics, and some Greek mathematics, with comments and so on. In that book, he makes a brief statement—doesn't dwell on it much—about how the Greeks prove all kinds of theorems. By taking the right kinds of axioms, they would prove the moon is half the size of the Earth. If you read Ptolemy, he makes a lot of statements about what he believes—all the rest of the results come from there. But today we know that most of those things are not true.

You said that for the Greeks the answers were either yes or no. But what other states could an answer be other than yes or no?

RN: According to the Indians—there are many Indian schools here, including the Buddhist school—it could be yes or no; both yes and no; or neither yes nor no. There are four possibilities. Whereas the Jains believe there are seven possibilities. In other words, it was certainly not true that everybody said it has to be yes or no. Not true.

Many people would argue that you know, you can't just do it by yourself. Why? But you can say, no that just doesn't make any sense. It was because they were extremely conscious of the weaknesses

of language. How are you sure that you have something which you can reach with your language? Let me take a very simple example—if you take a glass and half fill it with water, can you say it's half-full or half-empty? Tell me one answer.

Both.

RN: Exactly. You see, you are therefore, instinctively, an Indian, believing in the Chatushkoti system—there is no "paradox".

I see.

RN: If you asked the Sāmkhyas, "Is there a God or not?", they would say they don't know. They accept "we don't know" as a valid answer. In Greece it wouldn't be possible—it had to be either yes or no.

So quantum mechanics hit the West harder than it hit us?

RN: Absolutely correct. You are 100% correct. Doubt is possible in India. In other words, Indians have been saying: We're not sure we can understand all of knowledge. And knowledge also has to do with language. On the one hand, there were people like Panini who studied Sanskrit in such extraordinary detail, unmatched according to Western scholars till around 1800 in Europe. Unmatched. At the same time, they also knew the weaknesses of language. There are concepts that you can't reach with the words that you have at your control.

In information theoretic context, you are not learning anything more than what has already been said. You are just rephrasing it.

RN: I think that's what Wittgenstein would have said. And that would be something which, once again, like quantum mechanics, Indians wouldn't have been surprised about. That's why we don't believe in axioms.

Now, the question that all of this doesn't answer is the following: How come, if we were so good, we are not a force in the world today? See, that is the question which all of us have to think about. That is the real question.

As of, let's say, three or four centuries ago, say around 1600, the Indian system, and also the Chinese system, were actually ahead of the West. They had no need for Europe, no great respect for whatever the Greeks said. And you know, we were smug—approximately like the West is smug now in the last hundred years or so. Therefore, when the events began happening in Europe, we didn't think that there would be anything very new we could learn from them, and that carried on until 1600 or 1700. We were not curious about what they were doing.

What events do you mean?

RN: Scientific developments. Take Newton for example. Newton was in the 17th century, and he did revolutionize science, you have to admit that. See many Indians today—the Indians of this other school saying we knew everything—they don't admit that. I think they are making a big mistake. We have to find out the secret of European science, after having understood the methods and the logic of the Greeks. I feel that's also a fascinating question because, as I said, around 1600, no Indian would have thought that there was anything we needed to learn from Europe. He would, for centuries, have become used to his knowledge going east to Southeast Asia, to China, to Middle East, and from there through the Arabs to Europe.

Now let's go back to Newton's times. What happened in Newton's times? I think the best thing that happened was Francis Bacon. He said we don't get the proper way of doing science from the Greeks. And they could see that there was technology from the East they had never heard of, for which there were no Greek words. Exactly as the situation in India now. You see, we have no Indian words for the technologies we use today. So the Europeans borrowed words from the Arabs, because the Arabs translated them from the Sanskrit. That's why we have so many Arab words in science today—algorithms, algebra and so on. They are all derived Arab words really. They found that there was no word in Greek for these things. They began to say okay this is coming from somewhere else.

(to be continued...)