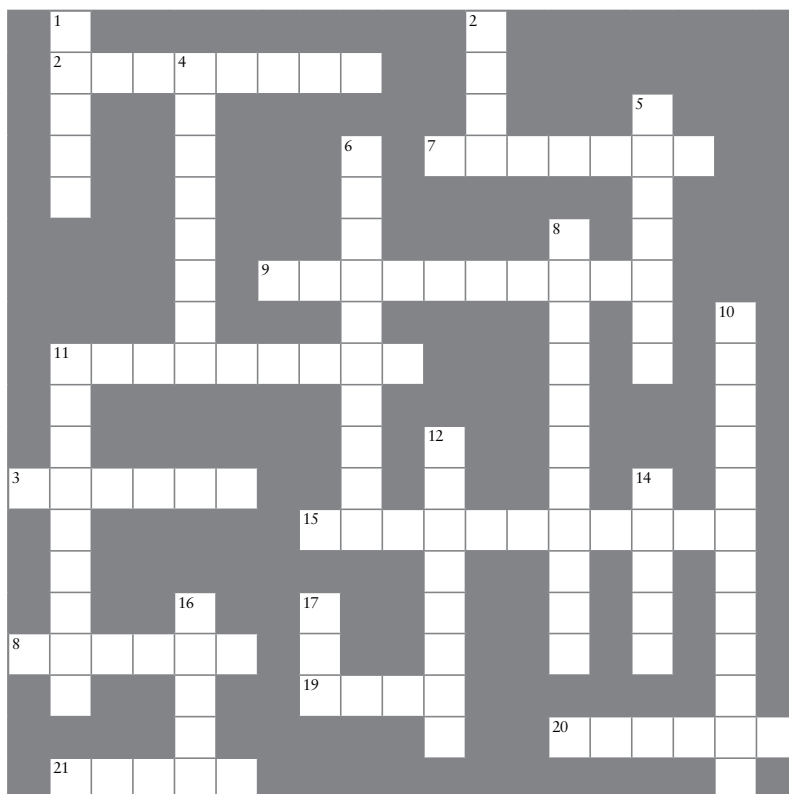


FUNDA MATICS

3Q2015



*This ITTB themed crossword was conceptualized by alumnus
Nitin Bhate (PhD, 2008, Chem Engg., H1).*



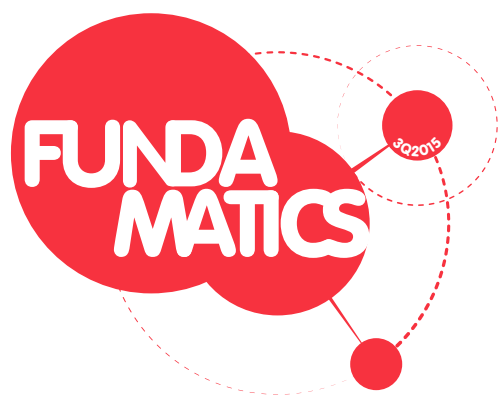
Across

- 3 _____, _____ exams were quite scary (4,4)
- 7 This was and is frequently spotted in IITB (7)
- 9 Famous temple in IITB (10)
- 11 Queen of the campus (6,3)
- 13 Famous canteen (5,1)
- 15 A famous joint for discussions & sometimes studies (6,5)
- 18 _____, _____ maar de. A popular term for helplessness (4,2)
- 19 We have all said this. Kya _____ hai yaar (4)
- 20 A popular term for market gate (1,5)
- 21 You will find this behind H4 (5)

Down

- 1 We have all watched movies in this huge hall (5)
- 2 As per IITB dictionary, girl is called _____(4)
- 4 This was a necessity during examinations (5,3)

- 5 Every student at IITB strives for this (7)
- 6 A very popular event organized in the last week of December (4,6)
- 8 Newly recruited faculty members used to stay here (5,6)
- 10 This was the sole restaurant opposite IITB in the 70s (5,7)
- 11 Residing here was called 'kale paani ki saaza' (6,3)
- 12 This term usually precedes main corridor @ IITB (8)
- 14 This hostel was reserved for Project Staff (5)
- 16 A slang term used for group of IITians (5)
- 17 Abbreviated term for annual cultural event @ IITB (3)



Quarterly magazine of
The IIT Bombay Alumni Association

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From the Beehive

B2B

Hallo! I am Gujjubee phellow. Queenbee ben called me and had a bee-to-bee toke with me. She asked me to write the aditorial.

“Give us an aditorial,” she said.

“How much you will geeve?” I asked. We are gujju phellows and will not geeve anything if there ij no bijnej. After all, it is B2B, bijnej to bijnej, no?

“Aw, c’mon,” she said. TAKE this opportunity to write the aditorial.

This was a good bijnej proposal. Asking me to take something free of charge. Taking ij better than geeving. So I took this opportunity and here is my aditorial.

Phirst-of-ole, let us wailcome Sharbaben to beehive. She is sweet as sharbat and spicy as shorba. But in beehive, she is Sharabee and she is bringing out Fundamatics with flavours of sharbat, shorba and sharab (without excise duty).

Fundamatics has been out-of-stock for sometime now. Only leetle quantities were released in 2015. Gujjubhais are thinking that Fundamatics phellows are trying to create artificial scarcity to increase advertijement rates and share value. Other gujjubhais are thinking that paper coast is high, so Fundamatics phellows are trying to wait for doaler to come down so that newsprint import price will give better proafit when doaler reduces. Real reason is that all phellows were so busy with Global Bijnej Forum (GBF), that they were counting spoonsorship value and hotail beel rather than counting words for next adition.

Many phellows have written in this adition about GBF and we weel think them in next adition if they bring some advertijement olso. Without advertijement, whose father will pay the beels?

Other than bijnej, Fundamatics has regular stuff. Articles, poetry, columns, humour, jocks, fiction, trivia, photos, illustrations etc. It is like Manmohan Desai and his Amar, Akbar & Antony. Song, dance, drama, rape, fights, coamedy, tragedy, you read what you want. You skeep what you want. After you finish reading, you can use it as a paperweight. When you get a new paperweight with your next adition, you can gift this coapy to your neighbour’s wife and impraise her as an erudite and scholarly phellow. Afterwards, you can borrow it back and sell to raddiwala and make enough money to buy one week’s supply of pan parag that you can share with neighbour’s wife. When there ij power cut, you can use Fundamatics pages as a paper fan. When gobar gas plants in your colony run out of manure, you can use Fundamatics copy as substitute. It has enough boolsheet to run plant for days. This is a soalid multi-purpoje investment.

If you are subscribing and reading Fundamatics, you are smart bijnej phellow who is getting good return on investment. But if you are writing for Fundamatics, you are smartest phellow who is also getting nam, fam and FB likes free of charge and you may even get a free bookshelf where you can stack Fundamatics issues.

So come one and come all and write for Fundamatics. Tastier than Pushpa Fui’s dhoklas, Sudha Kaki’s khakhras and Bhanu mami’s fafdas. (Pramila masi’s khandvi is not good, so we are not tacking her name)

To non gujjus: Give us articles. (otherwise we’ll take you bake-to-bake)

To Gujjus: TAKE this opportunity to write articles. (otherwise, we’ll geeve you buck-to-buck)

Jai B2B. (Bhavnagar to Baroda)



WALI MIYA SHAIK PEER

A question that was asked in the HSS department in the early 80s: Is it possible that if a monkey punches away on a typewriter (yes, typewriter. We're talking about the 80s, remember?) endlessly, he will eventually type out Shakespeare Hamlet?

Ans: Yes, time is infinite, but number of permutations that lead to the Hamlet are finite. So, the Hamlet will eventually get typed out at some stage. HSS cracked it nano seconds before Maths Dept did, but that's a different story scheduled for the next issue of Fundamatics.

Guess what! Some 35 years later, a group of monkeys tried to do just that. Rather, they attempted something more difficult and bizarre. They tried to enact the GBF. And they DID enact the GBF, faster than the monkey would have typed out the Hamlet, albeit with a few typos.

I am a fly on the wall that posited itself in meeting rooms listening to conversations amongst these monkeys. I became the bug that eavesdropped on conference calls. I was also the neuron that crept into, and read minds. Here, I tell a tale that can top the charts in Ripley's Believe-it-or-not. After reading this, you'll say "Not", but I'll still insist that you believe it. I saw. Remember, seeing is believing?

GBF! Baap re baap! Meant to transform India. Started off transforming blood pressures, ulcer levels, and heart rates. And the state of marital bliss. Also transformed some names. Ali Contractor became One-liner-Ali (OLA). Shridhar Shukla became PPT-Shridhar (PPTS). Deepak "Boss" Patil became Excel-Boss (EB). Bakul Desai became Essay-BD (EBD). Damayanti Bhattacharya became Typo-DB (TDB). Ajit Keshav Ranade became AK-56. (though he's 54). Kiran Shesh became follow-up-Kiran...er... follow-up-Shesh (FUS). Rahul Chaubey became LinkedIn-Rahul (LIR). Raj Nair became take-away-Raj (TAR). Namita Lobo became Hyper-Lobo (HL). Jaya Joshi became copy-paste-Jaya (CPJ). Suresh Shenoy became Super-sonic-Suresh (SSS). Vinay Karle became Whatsapp Vinay (WAV). And so on.

This was a diverse group of multi-lingual primates, masquerading as homogeneous and congenial homo-sapiens. Each communicated in the language of his/her choice. When Shridhar asked fellow apes to join a call, he asked via a PPT slide. Typo-DB asked *Shridha* what the *objecterive* of his *coll* was. Excel-Boss pasted the question in Column A and answered in Column B that the objective was to outline the objectives of GBF in an objective manner. One-liner-Ali answered that

he would join the call. After all, he stented his heart and secured an overseas deanship, all in the space of one line. Essay-BD, effusive as ever, greeted all call invitees in 500 words and recollected past instances of the last 32 calls and yes, he did add that he would join the call while driving.

Abbey saale, you drive us mad anyway. Why don't you skip a call for a change?

Ajit Ranade....oops....AK-56 only spoke in bullet points. To him, PPT was like Urdu. Nice, free-flowing and mellifluous like mellow scotch whiskey, but reserved for courtiers, courtesans, and crossword aficionados. Just as the shayars referred to a star as *falak mein chingaari*, the PPT guy meant tablecloth colour when he *slided* about a *logistics team*. Excel was like Sanskrit. Intense and wise. For pundits and purohits. Ethereal shlokas could have been decoded long ago had they been transposed from Row 2 to Column B. And who reads long essays unless they are paid for as some columnists in Mumbai Mirror get paid? For AK-56, there was only one language which the common man understood. The language of bullets. Ergo, his one bullet question was simple and staccato as his AK-56 “What is GBF?” Ouch! Guys tossing an omelette and frying a chicken had forgotten that they were inviting a guest who wanted to ask the proverbial chicken/egg-who-came-first-question.

But a call was a call. Follow-up-Shesh ensured that he hounded everyone via sms-es and not so *gentle reminders* to join the call. If you've read Joseph Heller's Catch-22, you'll know that the most profound questions were “Why is Hitler?” and “When was Germany?” So also with GBF. So called JEE crackers asking why, when, where, who is GBF rather than what is GBF. Why was answered by Hyper-Lobo. If GBF could help budding entrepreneurs, they would repay their gratitude via an ad in Fundamatics. She would thus feel not so guilty of drawing a salary from IITBAA. Where was answered by Essay-BD. Daar in Goa was

cheaper than anywhere else. So it was Goa calling out to GBF. Hi!

Abbey saale! Itna lamba kyu bolta hai? I could have downed 6 fenis in this time.

When was answered by Typo-DB. Anytime from August to October. Monsoon time in Goa was off-season and since she was a wannabee Gujju trying to shake off her Bongness, she wanted to explore the world of deals and discounts betwixt worships of Goddesses named Durga and Damayanti. Who is GBF?

**They tried to enact the GBF.
And they DID enact the GBF,
faster than the monkey
would have typed out the
Hamlet, albeit with a few
typos.**



Copy-paste-Jaya took this on. Rather, she tried to. According to her pahari wisdom, GBF was an agenda. Idea. Initiative. Action. Transformation. Ideal. Goal. Metamorphosis. Deliverable. Measurable. Scalable. And above all, a HEADLINE. TRP. Deal maker. The “What-is-GBF?” question was fired again from a bullet-toting gun of the gun-toting-AK-56, but was delayed because a response was awaited from a technologically challenged HSS as to “what is what?”.

As you can see, GBF was launched before it was defined. Reminiscent of the current start-up culture. Float an idea. Measure the reaction. Craft the goal after you've started. Just like buying a stadium and then inventing cricket to play in it. How does one make GBF succeed? No, we can define its goal later when we want to fail. Leave it mysterious and an *interactive* idea amongst *stakeholders*.

Who are the stakeholders?

Let's devise an SIG approach that'll need mentors and executive leads. (*Confession: They started by calling guys as figureheads, but a figurehead told them to designate his ilk*



as mentors. Aha! Respectability has finally hit the stands.)

Who will appoint and manage the stakeholders?

Let's set up a steering committee.

Who'll constitute the steering committee?

First 5 guys who make it to the call. Life is a race, remember?

What will the steering committee do?

It will decide the organisational structure.

What is organisational structure?

Steering committee will decide what it is.

So what will happen when the so called structure is called into action?

We'll have a program committee, execution committee, resource committee, mobilisation committee, and an over-seeing committee that will meet the review committee to decide how many other committees we need to appoint.

Why don't we keep it simple and appoint a GBF committee?

We can't do that dearie! We still haven't defined "what is GBF", remember?

OK, assuming we continue to indulge in this madness, where will the money come from?

How much money do you need?

Dunno! Will let the resource committee decide.

So why don't you set up a resource committee?

Ok! You're it. I've set you up as the resource committee. How will you fund GBF?

Look Man! I'm like the optimistic tramp who walks into the swankiest restaurant in New York and hopes to pay the bill by depositing a pearl that I'll discover from an oyster that I'll order.

Assuming, but not admitting, that I'll believe you, will you size up GBF?

How much do you want me to size it?

Last few conclaves in Goa measured 120 registrants who paid, but 150 guys who had lunch and 200 guys who had dinner and daaru. Can you up this to at least 500 attendees?

Tough! But let's have another call and figure out how to get 500 guys.

Look! We've had too many calls and we've agreed that 500 is a tall order. So why don't we have a call again and redefine our numbers? I'll ask this again to everyone via a free-flowing slide from PPT. In fact, let's all ask. Through PPT, Excel, essays, one liners, and some typos.

I think I've got an answer to your question. 500 is difficult. Why don't we set a more realistic goal?

What is more realistic? 300?

No, 1500.

You mean 150?

No, I mean 1500.

abbey saale, kitna daaru peeta hai!

You mean that it's easier to get 1500 than 500?

Yes, if you would've attended more HSS and less EE classes, you would've understood why.

But how can 1500 be easier than 500?

To explain that, I'll have to tell you a story. Got it on whatsapp!

Abbey Saale! Yehi baaki tha kya? Now, GBF attendance will be decided by Whatsapp PJs. Wonder if there's a way to call this off.

You see, it's like this. Let me read this out from whatsapp.....

Dad : I want you to marry a girl of my choice.

Son : I want to choose my own bride.

Dad : But this girl is Ambani's daughter.

Son : Well, in that case.....YES.

Next, the father approaches Mr. Ambani

Dad : I have a husband for your daughter.

Ambani : But my daughter is too young to marry.

Dad : But this young man is the Vice President of the World Bank.

Ambani : Ah, in that case.....YES.

Finally, the father goes to see the President of the World Bank.

Dad : I have a young man to be recommended as a Vice President.

President : But I already have more Vice

Presidents than I need.

Dad : But this young man is Ambani's son-in-law.

President : Ah, in that case.....YES

OK! This is a nice cute PJ. Forward it to my whatsapp account as well. But let's get back to work. How is it easier to get 1500 guys than 500 guys?

Oh! I thought you all would have understood. Let's say we go to some minister-shinister. If we tell him that we've got 500 guys

I'm like the optimistic tramp who walks into the swankiest restaurant in New York and hopes to pay the bill by depositing a pearl that I'll discover from an oyster that I'll order.



spread out in 8 different SIG rooms, he'll not come. But if we tell him that there are 1500 guys and there'll be about 200 in each room, he'll come.

Arre! What is this bak-bak? You'll tell the minister that there are 1500 guys, but how will you get them?

Elementary my Dear FUSson! We'll then go to 1500 guys and tell them that we're getting 6-7 minister-shinisters. That'll excite them to come. And we'll then go to sponsors and tell that 6-7 minister-shinisters and 1500 alumni-shalumni will be in Goa. This will line up all the sponsors. From Cadbury sellers to cooling tower merchants, they'll all flock to Goa.

Abbey Saale! Whatsapp mein tera share hai kya? Using PJs to design events. BTW, what's a cooling tower?

OK, assuming that we go with your plan, how will you achieve all this? Who will speak to the ministers? To 1500 alumni? To the sponsors?

50 PATRONS 6 PLENARY KEYNOTES
 520+ SESSIONS 15 PANEL DISCUSSIONS
 3 DAYS 16 SIG SPECIFIC KEYNOTES
 100 PRESS ATTENDEES
 25 INVESTMENT COMMUNITY PARTNERS
 240 TECHNOLOGY SHOWCASES
 6 UNION MINISTERS 80 GLOBAL EXPERT SPEAKERS
 100+ HANDPICKED STUDENT PARTICIPANTS
 1000+ ATTENDEES FROM 700+ LOCATIONS
 40+ IITB FACULTY
 4 TELEVISION CHANNELS
 100+ INDUSTRY PARTNERS

Well! We can round up some eminent folks who can do this for us. Let's call them patron-shatrons for now.

And why will these so-called patron-shatrons do this for you? And please don't answer in essay format. Try the one-liner approach. Learn from our multi-vocational friend. One who is Contractor, Professor, Dean, Ali Baba-all rolled into one.

Oh yes! Our friend's lives are many, though his lines are one. It's beyond my brief to be brief but I'll try. These patron-shatrons will do it for us because we'll ask them to wear ties and blazers, get photographed and we'll put up their photos on the website, remind them how great they are by digging up their profiles and tell them that Goan glory beckons them. Flashlights, handshakes, podium, wine-glass. All waiting for them in Goa if they reach out to minister-shinisters, alumni-shalumni and sponsor-fonsor.

And who'll bring in the patron-shatrons to bring the minister-shinisters, alumni-shalumni and sponsor-fonsors?

Kya re! Itna bhi nahin maloom? Super-sonic-Suresh will bring in many patrons and a few shatrons faster than you can memorise their names or order their blazers. And some of them will come in with their own blazers. One-liner-Ali will whistle in one line ad they'll all come knocking. Essay-BD can promise he'll stop writing essays if they sign up and they'll all bite-shite.

Abbey Saale! I don't want to break my head-shead by arguing/sharguing with you. Might as well say Yes to you. Wish I could say Shoo!

OK! Let's say we go ahead with this. Though it feels like Rajnikanth tossing one gun in the air, and using another gun to shoot the trigger of the tossed gun while it points at the villain during its mid-air rotation. Now how will we organise the venue, logistics, arrangements for the event?

This is a complex task. We should set up a logistics team. The logistics team will find a good event manager and outsource it to him.

Great, so do we get the event manager to

start with hotel bookings?

Oh No! These guys have cuts and trade-offs with hotels. Logistics team will use our network to get best deals from hotels.

OK! Maybe we'll get them to handle the food and catering?

Arrey! Kya baat karta hai? How does any event manager know that we alumni grew up on a staple diet of aloo at lunch, batata at Tiffin and potatoes at dinner? These guys will freeze palak paneer and gulab jamoon in their menus. Logistics team will handle the caterer.

OK! This makes sense. So maybe the event manager can handle the press, logos, graphic design, program details?

Nahin yaar! We have a separate PR agency. Copy-paste Jaya will copy one speech snippet and paste it all over Facebook, LinkedIn, Twitter, mass-mailers and in press releases. We've already got a graphic designer and a logo that is being decoded in IDC. And what does an event manager know about our program? We have a program committee to decide what the program will be.

What does the event manager do then?

Oh! We'll tell him what we've done and he'll take notes and check with us if we're doing what he's been hired to do. To unravel our plans and make sense of them, it's a lot of hard work and we'll need the best event manager to understand our ambitious agenda.

Abbey Saale! Why don't you hire a sweeper who'll watch you sweep the floor? Hire a minister who'll listen to your speech? Hire a sun that'll see you glow. Hire air that'll watch you blow?

I am a fly on the wall. Correction: I was a fly on the wall. The wall is no more. Crumbled down with all the insanity that abounded and resurrected itself into Shyama Prasad Mukherjee Stadium in Goa. The monkeys had punched out the Hamlet after punching out the Macbeth, Illiad, and Ramcharitamanas. (with a few paragraphs from Xaviera Hollander's "Happy Hooker" punched out for

target practice.) GBF was a madness that flew by water, sailed by road and bussed by air. Some also flew by FB, LinkedIn, Twitter and Indigo. Mad molecules that tried to collide in a collider. Minister-shinisters. Alumni-Shalumni. Press-Fress. TV-Shevee. Sponsor-fonsor. Investor-shinvestor. Exhibitor-Shexibitor. Showcaser-fowcaser. Policy-sholicy makers. Wore blazers in the day and shorts at night. Sang and danced at the venue and signed deals at the beach party at night to the background

We'll then go to 1500 guys and tell them that we're getting 6-7 minister-shinisters. That'll excite them to come. And we'll then go to sponsors and tell that 6-7 minster-shinisters and 1500 alumni-shalumni will be in Goa. This will line up all the sponsors.



sounds of "O Hansini! Meri Hansini!.....". Agendas and insights unleashed by something called ideating potential. Erstwhile sceptics and doomsayers opened up their purses (wallets actually) and hearts, they felt at home in this asylum called GBF. Cooling towers guys did not sponsor, but there were couriers and submarine makers who did. Mood was upbeat. Tailenders had walked into the field with table tennis racquets and hit sixers with shot put balls that were hurled at them at the speed of javelins. 3 days. 520+ sessions. 6 plenary keynotes. 16 SIG specific keynotes. 15 panel discussions. 6 Union ministers. 240 technology showcases. 80 global expert speakers. 50 patrons. 25 investment community partners. 100 press attendees. 4 television channels. 1000+ attendees from 700+ locations. 100+ industry partners. 40+ IITB faculty. 100+ handpicked student participants. 100 from external



Wali Miya Shaik Peer

community. 40% younger than Hyper-Lobo. Mission accomplished. Buoyant and victorious war heroes heralded this unprecedented (and incredible too) success and felt emboldened enough to define a more ambitious goal for the next edition of GBF. To define a single point agenda.

WHAT IS GBF? ◉

What was the bard's real Name? William Shakespeare from Stratford-upon-Avon? William Jacquez Pierre from Paris? Viulam Sheshappa Iyer from Trichy? Wali Miya Shaik Zubair from Hyderabad? Or Wali Miya Shaik Peer from Sitapur-upon-Yamuna? Whatever his real Name, our Wali Miya who has written this piece is a master phone-tapper, eavesdropper, mind traveller fly-on-the-wall who had privileged access to GBF conversations which he has reproduced without anyone's permission. That's why he prefers to remain anonymous and disappear into a midsummer night's dream.

Newton's Archimedes

*A*necdotes are anecdotes. Campfire tales that are recollected after decades to evoke nostalgia. Often, an anecdote becomes an integral part of the narrator, more real than the event that created the anecdote. It's an anecdote that an apple fell on Newton's head. Had it been a coconut rather than an apple, he may not have lived to tell the tale of gravity. Had Archimedes been from IIT, he wouldn't have had a bath, leave alone in a tub and we wouldn't have had the Eureka moment and his principle that's taught at IIT.

Maybe the anecdotes you read here will be retold years later if the contributors do anything akin to discovering gravity or buoyancy. Via an apple or via a soap. That hardly matters.

GBF had all the action it promised. It also had more. An unlikely downpour in October that sent saxophones and bongos packing. A no-show by cabs at the airport that left hundreds stranded, a budding entrepreneur amazed that he was actually able to score deals, a SIG leader getting teased by her volunteer. These are some of the anecdotes that you'll read about in this edition. For the next,

we promise to try and cajole our Queenbee to narrate how she drove into the kitchen on a motorcycle to wake up sleepy cooks to prepare a unique concoction of lime, honey, garlic, and hot water. Till it appears as an anecdote in the next issue, we'll have to let it survive as a rumour for now.

Jumblebee



YPO@ GBF

**NANDU KULKARNI AND JAIDEEP
DEODHAR**

The YPO performance at GBF 2015 was much anticipated by everyone, most of all, by the performers.

If you peeked behind the curtains during a rehearsal in Pune, you would see that YPO rehearsals resemble a wrestler *akhada* more than an orchestra. Old habits die hard. Folks in their 40s, 50s and 60s become nostalgic and fight over how their hostel in their time was musically superior to the other guy's hostel and had beaten them at so-and-so inter-hostel competition, and how that girl in your team was cute looking, but used to sing two full notes below the original Lata Mangeshkar scale, and so on and so forth. Once on stage, however, we set aside all existential disputes about chords, scales, rhythms and present a picture of perfect harmony and professionalism (well, almost).

The venue at GBF in Goa was superlative, to say the least. An open air lawn, by the sea. At a distance one could see the lights of a port. A slight breeze made the weather pleasant for a change. The bar was ready with the right stuff for everyone. The audience was slowly taking their places. And we were all ready on the stage – *tabla*, *dbholak*, congo, bongo, accordion, saxophone, guitar, flute, octapad, keyboards. Mike check? OK. Feedback speaker? OK. Main speakers? OK. Reverb for saxophone? OK. Compere has the script worked out? OK. Weather? OK (?????). No last minute hiccups. Everyone was ready

If you peeked behind the curtains during a rehearsal in Pune, you would see that YPO rehearsals resemble a wrestler *akhada* more than an orchestra.



for the blast off.

However, a wrong kind of blast off occurred. One had heard of inclement weather in the mountains, and in higher latitudes. But this was Goa, in the month of October. Rain was obviously not on anyone's mind. Yet, the laws of probability became amply clear that day – there is no law of nature which says that it cannot rain in Goa in October. And so it did rain in Goa in October.

As our first singer started to get into the mood, and get the audience in the groove, the Rain God also decided to express his emotions with a shower. So one moment we were warming up for a great evening, the next moment we were running to protect our precious instruments from the downpour.

All was not lost – the rain stopped as abruptly as it had started. The performers resumed their positions on the stage. The audience took their places next to the bar. As the next song was heard by everyone, the randomness of nature was in full fury and a heavier shower tore through the show.

Sadly, by now the mood was adequately



dampened, and the show had to be cancelled after just 3 songs.

Nonetheless, it was a great effort by the organisers to get the YPO at GBF. There should always be something to look forward to, and we sure look forward to YPO at GBF 2016. ☺



Nandu Kulkarni
B.TECH'74, EE, H3

Nandu Kulkarni is an independent consultant in Banking and Payments Technology, with over 35 years of experience in managing IT product and services businesses. Nandu is a keen student of Hindustani Classical Music and runs a website called ShadjaMadhyam.com, dedicated to Classical Music. He is one of the founders of a light music orchestra of IIT Bombay Alumni called "Y-Point Orchestra". At GBF, he was an executive lead for the ICT SIG and was involved with organising the panel discussions and start-up presentations. He also organised the Round Table Discussion for the Industry-IIT community engagement model.



Jaideep Deodhar
B.TECH. '94 CHE, H-9

Jaideep runs his own company, Simulytics Services, in Pune. The company provides software products for logistics and supply chain. With 20 years of experience, Jaideep has also worked with large firms such as Asian Paints and JP Morgan Chase. He is passionate about music, especially old Hindi songs and Hindustani classical music. He plays the rhythm guitar for Y-Point Orchestra. He is known to be stubborn about chords and scales, much to the chagrin of other YPO musicians. Apart from music, Jaideep is a regular at marathons in Delhi and Mumbai. Jaideep has a B. Tech. from IIT Bombay and a P.G.D.M. from IIM Lucknow.

He participated in GBF to network with alumni and to understand what other entrepreneurs are doing.

Be-car Baatein

KIRAN SHESH



It is 12:45 pm on Oct 17. The stadium is filling fast and it gives me a relief to see the crowd pouring in. This is the most critical time of the GBF and most of the airport arrivals are to happen between 10 am and 2 pm. I am feeling good in my black suit and white shirt and generous dosage of deo. Little do I realise that there are more people stranded at the airport than are entering the stadium. As usual my mobile is on charge. I glance at it and feel the shock. There are 12 missed calls and my phone is on silent by mistake.

I discontinue my discussion with the event manager and quickly start looking at the missed calls. Fortunately, these calls came in last 7 minutes. Three from Jaya, three from Damayanti and balance unknown numbers, possibly participants and the drivers. Before I could call someone, the phone rings again. It is Jaya with a very different voice tone...anxious, frightful and nasty. Siddharth Zarabi and his crew were not attended well at the airport and he had to take a cab to get to the hotel. I now realise, given the nature of the problem, that she was quite nice to me on the phone. I remembered Raj who told me in Jan, "Kiran, make sure the airport experience is wow. This is what people will remember for a long time." I sense the magnitude of the problem and feel the adrenaline rush in my body. FYI – I had just turned 50 the previous day !

Without wasting a moment, I rush to the exit and hop onto an empty Innova, ignoring

the shouts of some of the people who were bonafide passengers in that car. I am on way to the airport. I tell the driver, "*Bhaga...bhaga aaj teri Basanti ki ijjat ka sawal hai.*" He looks at my suit in the rear view mirror and then assesses my language and smiles. We are gliding on the road. I am not aware of what I am going to do at the airport, but I knew I would do what it takes to contain the damage. We reach the airport in 40 minutes and my phone is showing 9% charge.

I look around for event management staff and our staff and find none. Then I see a driver holding an A4 ruled paper sheet with GBF written with sketch pen and the sheet is slightly folded. He is my starting point. Through him I connect with the rep inside who narrates the story of what happened. Fortunately, there is the option of buying a ticket and entering the arrival hall. I enter after 10 minutes to empty GBF welcome desks. One has gone to the loo and the other is trying to find a mobile charging station. While I am waiting for them to return to the welcome desk, I see a participant walking towards me. I ask him, "Are you an alum?" He says, "I am a speaker". I welcome him, offer to drag his trolley (he doesn't agree thanks to my suit) and I see him off at the taxi pick up.

I am back at the welcome desk and both the attendants are back too. Thanks to my training as a coach, I listen to them completely and figure out there were more design

problems at the welcome desk than execution problems. Now it is my turn to release the frustration. By now, my phone is at 4% charge. So, I take the phone from the event management staff and call the manager. I tell him, "What you told me were all stories, what I am telling you is the TRUTH." I then tell him to fix the balance of the pick-up arrangements, hand over chocolates to the welcome desk staff and come out to return to the stadium.

I just feel a little better. I smoke in the hot sun with a black suit. I was burning both inside and outside. This was my penance.



Just as I am about to get into the car, I see three participants coming with the staff towards me. I see his pleading face to release the car for the guests which I immediately do. I just feel a little better. I smoke in the hot sun with a black suit. I was burning both inside and outside. This was my penance.

As I am returning back to the stadium, I get a call from Pratap asking me to rush to the stadium as one minister's food taster urgently wanted to meet me.

I said to myself in Marathi, "Naveen gilli naveen dav. Chala!!" ◉



Kiran Shesh

**B.TECH. '88 CHE,
M.MGMT '04 MGMT ,H-4**

Kiran was an active member of the GBF team and played major role in execution and fund-raising activities. He also took on additional role of "follow up" whenever deadlines were getting missed. He was one of the common denominators throughout the year-long preparation.

He has recently taken up the role of CEO of IIT-WashU Joint Venture Company. He refuses to leave the campus...so it seems.

Bombay to Goa

CHAYAN CHATTERJEE

“First alumni event in more than 10 years since graduation!” is what came to my mind as I was boarding the flight to Goa. Not that I have been actively trying to avoid my classmates or that I don’t enjoy their company, I guess the Alumni Association just made a really kickass effort this time around to grab my attention and got me to sign up.

In the weeks leading up to the GBF, I had caught myself feeling excited about the upcoming event. Partly because of the networking opportunities that the SIG core team spoke about so much, and the rest because I just wanted to catch up with the ‘junta’ and talk about old times. I just prayed that the event would live up to expectations...

Looking back, the GBF was exactly what I was looking for, and here are some of my memorable moments:

- **The Healthcare SIG email group**

I was simply blown away by the enthusiasm of the fellow SIG members on the email group. There were several conversations about topics to be covered at the event, or the choice of speakers, and it was great to see people from different backgrounds and age groups chipping in, contributing to very rich and insightful discussions.

- **Working with the core team**

I’ve already mentioned the countless emails going back and forth, and someone had to sift through all that and come up with an agenda that catered to all (well al-

Not that I have been actively trying to avoid my classmates or that I don’t enjoy their company, I guess the Alumni Association just made a really kickass effort this time around to grab my attention and got me to sign up.



most) the requests. And we were fortunate to have the team of Prof. Bellare, Girish, Zenobia and Hardik take the lead. I had the opportunity to briefly work with them at the event, and I must say that it was really effortless working with this group. I was most impressed by the group’s constant introspection about the ongoing events and planning for the future. You guys better watch out for the Healthcare SIG in 2016!

- **Presentations by alumni and current students/researchers at the Institute**

The highlight of Day 2 – it was great to see alumni presenting their product and business ideas. As the founder of an early stage start-up, I learnt as much from these presentations as I did from the expert panels. It was also very encouraging to see current students, researchers and start-ups from SINE present their development efforts.



In addition to being a learning experience, these presentations also offer an excellent opportunity for networking and identifying suitable business collaborations. Imagine my surprise when I look up and see someone presenting a product that would go hand-in-hand with a solution my firm is presently developing and would save significant development time. By the way, that is exactly what happened!

- **The ‘follow through’**

The SIG love is far from over. About a fortnight after the event, I received an email from a core team member informing me that a senior SIG member was interesting in learning more about my business. I quickly set up a call and was treated to a one-on-one gyaan session with someone who has nearly 20 years of experience in the healthcare space. That, in my opinion, is the true essence of the GBF.

“Totally worth it!” was my thought as I left for the airport. And now I find myself looking forward to the next edition. ☺



Chayan Chatterjee
DUAL DEGREE '04 ME, H-4

As COO of Lattice Innovations, Chayan Chatterjee leads software development and product delivery. Chayan started his career with ITC Limited, a consumer goods conglomerate, in manufacturing and engineering. He subsequently developed sales management systems for OmniGuide Surgical. Most recently, he led indigenous product development in his role as Director, MedTech at Glocal Healthcare. As a member of the Healthcare SIG, Chayan is interested in collaborating with fellow entrepreneurs and industry professionals to identify innovative technology solutions that can reduce the cost of healthcare delivery and improve accessibility in low resource settings. Chayan holds a Dual Degree in Mechanical Engineering from IITB and an MBA from the Wharton School of Business.

Dinners During the GBF

ZENOBIA D. DRIVER

The first day's dinner at the GBF reminded me of Valfi dinners (Hostel Valedictory functions, in case you've forgotten) on campus. A few dishes seemed eerily similar, as did the hordes of hungry IITians; the only things that made the difference clear were the variety and quantity of non-veg items on the menu (Go Goa!), and the absence of torn chap-pals, faded T-shirts and gheesoos. Methinks the IITBAA folk purposely engineered the Valfi-like elements to heighten the sense of campus nostalgia, and it worked. At least on some people.

One group that I was a part of for some time was a study in contrasts and hence great fun to listen to. There was someone from the 1890s - oops, slight slip of the keyboard there, I meant 1980s - describing IIT and IITians of yore, and then there were two sprightly young bucks currently in their third year at IIT describing life in IIT as it is lived currently. Listening to the trio interact was like watching Gandalf attempting to communicate with Ford Prefect and Arthur Dent!

The second evening, dinner was in a scenic location called Bay 15. There was a stage and music courtesy of the YPO (Y Point Orchestra), a bar, the ocean waves gently lapping against the shore – the perfect setting, right? Then the gentleman on stage decided that the crowd needed to be woken up. So he announced that the bar was open and asked everyone to go up to the bar and get



Listening to the trio interact was like watching Gandalf attempting to communicate with Ford Prefect and Arthur Dent!



their drinks, quickly, adding as explanation, “I don't want people walking up and down during the song and disturbing me!” I cracked up in laughter, while those who were yet to get their drinks looked totally irritated. I'm sure most probably decided to wait until the song began and then head for the bar, the only respectable reaction to such an announcement. In spite of repeated ‘disturbances’ though, the music began and all was jolly for some time, until the heavens opened up and everyone had to scramble for shelter. Everyone but the Boss, that is. Deepak sat where he was, covered his drink with one hand to maintain the right concentration of alcohol, and pronounced, “COME RAIN OR STORM, GBF WILL GO ON.”

That's the spirit, Boss!

P.S. Warning:

Cigarette smoking is injurious to health and may cause cancer. Just in case there are any young impressionable children reading this. ◦



Our SIG was blessed with an eager young student volunteer who not only managed tons of work but also had us in splits every so often with his foot-in-the-mouth comments. On one such occasion, a group of us, of varying vintage, were chatting about the food available on campus. (In case you're interested, 'All that I don't miss about IITB' includes Dry D, over-brewed tea, bread pakoda, *kankad pe daant toda*, etc. I could go on, but that's another story.) We oohed and aahed over the small cafes / shacks that have sprung up outside each hostel now and the relief they offered from the staple mess food. In the spirit of unity and oneness, the young lad tried to include himself in the suffering-and-complaining pack, but unfortunately chose the wrong example. He indignantly pointed out that the shacks weren't much to write home about and offered hardly any variety; for instance, the one right outside his hostel offered "keval teen type ke *parathe*". By *God ki kasam*, that's food fit for a king compared to a lot of what we ate. I wonder if they also get silver cutlery to eat the bloomin' *parathe* with.

Another day, another pearl of wisdom from the young lad. I'd sent him a mail to request his assistance in changing the photo that I'd submitted for the GBF website. I happened to mention that in the photo I resembled a lunatic axe-murderer attempting a fake smile for the flashbulbs that popped as the judge pronounced her guilty. Within minutes, I had a mail expressing the young lad's total agree-

Volunteer No. 1

ZENOBIA D. DRIVER

ment with my opinion of the photo and promising to help me get it changed pronto. ('tis cruel incidents like this that crush the sensitive souls of lesser mortals, luckily I have little soul and even less sensitivity.) Someone gently steer this young lad away from the corporate world though, he won't last a minute there. On the other hand, if he does end up joining a large organisation, I want a recording of the team meetings please. ☺



Zenobia Driver

M.SC., CHEMISTRY '98, H10

Zenobia began her career in a line role in Johnson & Johnson India in Sales and Marketing. She went on to become the Founder-Director of Escape Velocity. She is also one of the founder members of TREE Society (Training Resources for Enabling Enterprises Society), a group of people from diverse corporate backgrounds that contribute part of their time towards equipping rural micro-entrepreneurs with appropriate business skills in order to help them run successful businesses. Zenobia has an MBA from IIM Bangalore and an M.Sc. from IIT Bombay. She is the co-executive lead of the Healthcare SIG of GBF and in that capacity actively participated in the program execution of the event. She is currently a director of the Executive Board of Directors of the IIT Bombay Alumni Association.

The Cabinet Reshuffle

BAKUL DESAI



GBF was a foolhardy venture on all counts. The most ambitious and outlandish ideas were attempted, and it was by sheer quirk of fate that most materialised, and materialised well. One such idea was to invite ministers to GBF – to deliver keynote addresses, meet entrepreneurs and policy experts, answer questions, watch showcases and demonstrations, and offer support to GBF on a continual basis. The idea started off as a plan to invite 3-4 ministers. The target changed to 6 when the initial going looked easy. It then became an ambitious 9 when the initial confirmations started flowing in thick and fast. And then, the Election Commission of India dropped a bombshell. It announced the Bihar elections in the middle of GBF. Smriti Irani, Rajiv Pratap Rudy, Ravishankar Prasad and JP Nadda had to drop out. The plotters and planners of GBF went into re-design mode. Let's add Nitin Gadkari. Let's drop Venkaiah Naidu. Let's re-invite Jayant Sinha. And so on. It was not clear if they were talking about high profile ministers or shuffling cards in a deck. Reshuffling actually. Or maybe re-reshuffling. Everyday was an exercise in firming up schedules of new ministers and then junking the plans next day and firming up something else. They changed names, they changed times, they changed topics, they changed everything – maybe to prove the point that they at GBF are agents of change. This was the mother of all reshuffles and the final

trump cards that they rolled out (in chronological appearance at GBF) were Manohar Parrikar, Jayant Sinha, Prakash Javadekar, Suresh Prabhu, Piyush Goyal and Nitin Gadkari. Many have penned some memorable GBF anecdotes for this issue and we're sure we'll have more for you in future issues, but for anecdotes related to ministers, we asked Bakul Desai to do the honours. As one who often bites more than he can chew, hear in his own words how he got bitten (and beaten) in the process of attempting something of "cabinet" proportions.

Disclaimer from the author: These anecdotes are intended to poke light-hearted fun at ministers and does not take away our gratitude to them for having graced GBF and for bringing it up to the standard that they did.



Manu Smriti

Date: 15th October, 2015

Time: 5:40pm, less than 24 hours before GBF

Place: Plush precincts of Research Centre Iमारत at Hyderabad.

I was there because the Honourable *Raksha Mantri* of India, Manohar Parrikar, had surprised me with a call just 2 hours afore that I should meet him there. So there I was with Manu (after all, that's what we still call him, the RM status came later), minutes after he had inaugurated a plush admin block and was inspecting missile components that were put on display for him.

Manu has been a huge support for GBF, right from its conceptualisation phase, and it was at his insistence that we were getting a star-studded galaxy of ministers and global experts. GBF was about to open to a full house within 24 hours, thanks to some 5-6 meetings that we had with Manu to firm up all arrangements.

Hence, in between inspecting missile

components, I was briefing Manu about the ministers who had confirmed, their ETA in Goa, and arrangements being made for their pick-up and briefing. Local MP of Chevella constituency Vishweshwar Reddy (2nd richest MP in India with declared assets of 528 crores) was within earshot and he pulled me aside to ask me how many events we were talking about. I told him that we were talking about just one GBF starting next day. Vish's eyes opened wide in amazement. His wife, Sangita

Was I sure that 6 ministers were coming for one event? When I nodded in the affirmative, Vish remarked that so many ministers may not have been present at Amit Shah's son's wedding.



Reddy, was the MD of Apollo Hospitals and was one of our GBF patrons, but alas, was not able to make it due to a schedule conflict. Vish asked again. Was I sure that 6 ministers were coming for one event? When I nodded in the affirmative, Vish remarked that so many ministers may not have been present at Amit Shah's son's wedding. Manu turned and ssh-ed Vish. Who wants a *panga* with Amit Shah?

But Manu had more to speak with me and his flight to Bangalore was to take off in half an hour and the airport was 15 minutes away. So Manu bundled me in his bulletproof Scorpio provided by the Telangana Government and as we raced to the airport, Manu asked me an elementary question "What do I have to do at GBF?" This question hit me like a slap. We were all so GBF-ed out, we had forgotten to share plans with those who were to play them. It was like calling Shah Rukh Khan to a shoot without giving him the script in advance. And the worst part was that I didn't know myself what Manu had to do. We

were all practicing management mantras and the program was “decentralised” to a program committee who in turn had sublet the job to SIG heads. But I had to answer Manu. So I told him that apart from delivering a keynote “at some time” on Saturday, we also wanted him to participate in NDTV’s “The Big Fight”. Manu’s reaction was instantaneous.

“Are you calling H₃ guys to GBF?”

Oops...I had forgotten that a big fight was always associated with some “cultural exchanges” indulged in between inmates of H₃ and H₄ from their terraces and in the dead of the night. So I told Manu that the CEO of NDTV, Vikram Chandra, is the anchor of a popular Saturday night show titled “The Big Fight” and Vikram was breaking from covering the Bihar elections and flying down to Goa from Patna for a day to do this special edition of the Big Fight. This would also be the first Big Fight episode that would be shot in Goa and outside the studio. Manu’s next question to me was a tighter slap than before. Why did I assume that Manu would be OK to participate in a big fight? How did I send my confirmation to NDTV without cross-checking with him?

While I fumbled for answers, Manu said that he will do that fight/*shight* show as long as he does not have to perform in a standing position. *Jo bhi bolna hai, baith ke boloonga.* That was a relief. I was pretty sure we could fix that small detail with Vikram. (And that’s how it turned out. We didn’t have to ask. Vikram changed the format from standing to sitting positions on his own accord.) And Manu’s last question had me struggling for answers. Just as it used to happen during the endsems at IIT.

“Who are the other panellists on the Big Fight?”

Aah....hmmmm.... we will have Phil Shaw from Lockheed Martin and some *gora* from Northrop Gunman...*aisa kuch* defence company *haina* US mein? ...and Prakash Shukla

from Mahindras and some other guys from L&T and Bharat Forge and some Prof from IIT and some other “defence experts”...I’m not totally sure, I’ll check with our Make-in-India SIG leads and tell you.

Fortunately, we reached the airport at this moment. As we stepped out, Manu’s parting words to me were “Let’s meet in Goa tomorrow. I think I’m going to have a big fight with you. *Kaisa kaam karta hai?* You should have been in H₃.”

Pen is Mightier than PJ

Prakash Javadekar, let’s call him PJ from



here onwards, was neatly dressed. Yellow *kurta* and a pink sleeveless tunic to cover it and a good mass of jet black hair to top it. Perfect attire for one who is a Minister of State for Environment, Forests and Climate Change. He was articulate, fun, witty, jovial and interactive, and I was glad that I had appointed myself in charge of VIP hospitality.

So when I seated myself beside him in the front row, we continued our light-hearted

banter when others were speaking. And I was happy and felt privileged when PJ asked to borrow my pen. After scribbling some notes furiously on a paper (he didn't borrow a paper, for some reason, he carried a few sheets with him, sans the pen), I looked in stupefied horror to see him plant the pen into HIS pocket. The one which was a thin slit in his tunic. My pen was no Mont Blanc. Neither was it a jotter refill. In fact, I do not remember who I swiped it from. So should I let PJ swipe it from me? True, I did not use the pen often enough, it was used mainly to try a Sudoku puzzle on flights.

While I was battling the dilemma about how to recover my prized possession (my flight out of Goa was 2 days away, there would be another Sudoku to attempt), PJ leaned over to say that he wanted to go next as the speaker and could I please request Romesh Wadhvani to speak later. So I scurried to Romesh, seating some 6-7 sofas away. I had to bend while scurrying to avoid irritating the audience behind. Romesh said NO while I leaned before him and as I walked back, still bent, to PJ, PJ sent me back with another appeal that Romesh should condense his speech to 30 minutes. These back-and-forth parleys continued some 5-6 times. I was literally crawling now, back had bent beyond repair and my spine was probably more plastic than elastic. And before the PJ/RW "talks" through the interlocutor (yours truly) could reach fruition, PJ was called onstage and up he went with my pen still in pocket.

I'm not sure, but maybe the clip of my pen must have been visible to the TV cameras of Bloomberg Channel as they televised PJ's engaging talk. A gold line against a pink backdrop. That's when I took the boldest decision in my life. My pen was now a celebrity. On national TV. For a change, it did not embarrass me by running out of ink. (Had that happened, PJ may not have remembered to talk about his conversation with a Peruvian minis-

ter). The pen had to come home to mama, no doubt about this. My back was aching, thanks to the fruitless missive PJ had sent me on and maybe I would write to him some day with this pen if I needed a spine replacement.

While signing off, PJ got into the car and waved us all bye. I counted to 10 and then told PJ that I had a request. He stopped rolling up the glass, in fact he rolled it down again and asked me what my request was. After a pause, I told him that I would like to request him to

I looked in stupefied horror to see him plant the pen into HIS pocket. My pen was no Mont Blanc. Neither was it a jotter refill. In fact, I do not remember who I swiped it from. So should I let PJ swipe it from me?



keep my pen with him. I would feel privileged. PJ's hand shot into his tunic and quickly handed me the pen with some words of profuse apology. Even while I was pretending to not wanting to take the pen back, Pratap Chandnani burst out into uncontrollable laughter and Dinar (Bhatu) Bhatkar laughed and shouted, "*Gujju saala!*" He then asked PJ, "*Dekha, kaisa gujju hai yeh?*" PJ was gracious about this. Maybe, he was wary about his *gujju* boss in South Block.

The Derailed Innova

Goa airport was second home to GBF. 1000+ GBF bound folks were to pass through its precincts. We had detailed the logistics to an excruciating fault. About flight times, pick-up arrangements, hiring space for a help desk, liaising with the protocol department for VIP handling (never mind that it didn't work out, that's a separate story). But we had forgotten that one of our prized attendees was Railway



minister Suresh Prabhu, who would obviously opt to arrive by, what else, the Konkan Railway. Hence, he remained unpicked and unmet by a clueless GBF team that did not know where the railway station was. And by way of atonement, we met him early next morning to brief him about GBF and his proposed program. Suresh Shenoy, Pratap Chandnani, Damayanti Bhattacharya and I finally walked into Suresh Prabhu's suite at 9:10am to pick him for a program that was to start at 9:00am at a venue that was 15 minutes away.

And we started by telling him that we had changed the program beyond belief and he should please stop brandishing the printout which showed something else that we had planned 3 months ago. Fortunately for us, Suresh was exactly as Manu had described him. "*Bilkul mere jaisa*" is what Manu had said and sure enough, Suresh was simple, down-to-earth, unassuming, flexible and a tad amused at our erratic ways.

Damayanti and I sat in the car which doubled as a pilot car. Suresh Prabhu and the local protocol officer were to follow us. Halfway to the venue, Damayanti's phone rang and she answered it. At the same time, I called up

Shridhar to tell him that we were on the way with Suresh and that Raman or someone from the Infrastructure SIG should be available to receive him, apart from Director Khakhar. While I was speaking, I saw Damayanti say something to our driver Guru. I then saw Guru do a U-turn soon after. While getting U-turned along with Guru and the rest of the car, I saw Suresh Prabhu's car amble on straight without U-turning. I was still on the phone and I gestured to Damayanti in sign language to ask why Suresh Prabhu's car was not U-turning with us. Damayanti, also still on her phone, tried to say something in sign language. Clearly, she hadn't deciphered my sign language question and was either answering a non-question or asking one of her own. (As it turned out, she was trying to ask me, "What are you trying to ask?")

While we were hurtling away at some 100 kmph on a U-turned trajectory and Suresh was probably hurtling away at 100 kmph in the opposite direction, I motioned to both of us that we stop our calls and try communicating in English.

Why is Suresh's car not following us? This was my simple question to Damayanti.

Her answer was equally simple. He's going to the stadium for GBF.

It took me a few seconds to recover. So, Suresh Prabhu was going to GBF. And where were we going? To Arambol Beach? To Bhatinda? To Buenos Aires?

Of course not yaar! We are going to ICG (International Centre Goa).

Aargh...why are we going to ICG?

See, Boss (Deepak Patil) just called to say that Manu has reached the venue and the guys there are not ready with his coffee. They said that coffee will be ready only by 11. So I told Guru to take us to ICG. I'll ask the kitchen guys to make some coffee that we'll carry in a thermos.

What followed cannot be reprinted here. I got into expletive mode full blast, first at

Damayanti and then at Guru who was not sure how to re-U-turn through the massive divider on the road. Anyway, we raced to the venue, but not fast enough to escort Suresh in. Fortunately, Manu did the honours, but his coffee hadn't materialised yet. Damayanti, still reeling from my expletives, ran in and did something that got Manu his black coffee and also got Suresh some tea with separate milk, the way he likes it. But I'll never forget that our car must have been the first Innova in history to get derailed from a road.

Piyushcolada

Something was definitely amiss on this, the 17th day of October 2015. The erudite, outspoken, extroverted, articulate, energetic, effusive Piyush Goyal arrived in Goa with a wry smile and a gentle nod. No bear hugs



and hearty greetings today. Was it the fact that he had flown into Delhi from Jaipur early morning and had flown to Goa within 6 hours and would then fly to Mumbai in 2 hours and would fly back to Delhi after another hour and then fly to Washington DC within another 12 hours? As it turned out, there was something else bothering him. Something that

became evident when Piyush started answering in nods and sign language. His throat had gone for a toss. Attempts at speaking were emitting hoarse whispers and making him wince in pain. If anybody wants to know what losing a voice means, he should have sat in the Innova that was being driven by a wannabe Schumacher to take us from the airport to the GBF venue in time.

The voice was so hoarse, that if one could induce Piyush to sing "*Yeh nayan dare dare...*", it would have sounded more Hemant Kumar than the original Hemant Kumar himself. He nodded that he knew what GBF is (wish he could speak and tell us what it was, we didn't know and still do not). He nodded that he came because our very own Manu had told him to. He nodded that he was to speak on energy before an audience who thought they knew better. In between nods, he managed to whisper that if we could organise hot water with honey, *loung* (cardamom-clove kind of thing...*paan* lovers may know what it is) and various additives that would alleviate his throat from acute misery for 40 mins, then he would find his voice back to thank us in two words at a minimum. He also whispered "Leave it *yaar!*" after he saw our incredulous expressions. He then slipped into punching away on his phone. We (We=Shridhar and Bakul) thought that maybe he's SMSing a recipe to us. Recipe to a concoction that can relieve throats. I tried to recollect an ad jingle that promised to relieve "*gale mein khich-khich*", but advancing years made me mix up Vicks, Halls, Boroline and Erasmic blades. BTW, Piyush also whispered that since he had to travel to Washington DC next day, he did not want to **** his throat any further, so would we please leave him alone to punch on SMS and WhatsApp to his ministry officials?

So I called Damayanti and Shridhar called Boss. To tell them the same thing. Hot water. Honey. Some *loung* or something like that. Shridhar also asked for garlic and I asked for

any thingamajig that relieves *khich-khich*. Not sure what Boss said to Shridhar. I know that Damayanti uttered some unparliamentary words that I expunged in my reply to Piyush. But Shridhar and I were unanimous in our responses. “Let’s leave it *yaar!*” One can whistle for feni in Goa and it’ll flow in a river wherever you are. Honey was viscous and not Goa-friendly on a Saturday.

At the venue, Piyush was greeted by an enthusiastic mob that thrust out visiting cards

Attempts at speaking were emitting hoarse whispers and making him wince in pain. If anybody wants to know what losing a voice means, he should have sat in the Innova that was being driven by a wannabe Schumacher to take us from the airport to the GBF venue in time.



and handshakes. He smiled affably at everyone but turned to me and held up his little finger to tell me that he needed to use the “re-stroom”. Sign language was still on and I tried to convey the same to everyone else in sign language that they should politely step away and let him perform some elementary and nominal ablutions. This was a moment of revelation to everyone assembled there. Ministers are like us, they need to pee from time to time. Before Piyush came back, I told junta about his ***ed throat and they quickly changed the format from a “keynote” to “Q&A”. Maybe they banked on the presence of Ashok Saraf in the audience and thought there would be more Q and less A.

While we walked into the hall and sat in the front row, I saw a surly Damayanti walk

towards us and I was sure that she would hurl a glass at me. Just as I ducked from an impending missile, Damayanti parked the glass before Piyush and asked him if it was OK. I saw the contents of the glass. Pale-brownish and a wee bit amber in colour. Looked like an exotic mocktail served in Hyatts and Hilton. It had all the ingredients that Piyush had asked for and also had some more. As Piyush gulped down the glass, Damayanti asked him how it was and Piyush circled his thumb and index finger to pronounce that it was *mast*. He then motioned to me to deliver him another glass as he walked up to the stage and answer questions from argumentative IITians. The next glass was delivered to him on stage and in full glory of TV cameras.

This was a crowning moment for IITians who peddled themselves as innovation merchants and champion *jugaadus*. I ran into the kitchen to sample this innovative Piyush-colada. It was exquisite and gave a run for money to Goan feni. My voice was not gone, but this Piyushcolada gave me a louder voice to remind Piyush to thank us when he was departing. Still trying to crack 2 riddles. What is *lounge*? What is GBF?

To Tea or Not to Tea ?

Nitin Gadkari came to the GBF venue in a classic photo-finish moment. Had he arrived even 5 minutes later than he did, many of us would be writing these memoirs from a prison cell. Let me narrate the pertinent background first. CNBC’s Shireen Bhan was to do a live show with 3 ministers in conversation with eminent alumni. Jayant Sinha and Prakash Javadekar had already left. Manu was there of course for us. Suresh Prabhu wanted to leave by 4pm. Piyush Goyal would come by 1:45pm and leave by 3:30pm. Nitin Gadkari’s special aircraft from Nagpur would bring him in by around 4pm. Hence, we decided to do the show at 2pm. With Manu, Suresh and Piyush.

But a hysterical Jaya Joshi came running to me to say that Shireen was landing at 1:30pm and would not be able to start the show till 3:30pm. So can I please request all the ministers to change their itineraries? Why doesn't Shireen make do with 2 ministers? It's still one more than she's ever done before, right? Right, but the problem was that Jaya had promised her 3 and was afraid that Shireen would back off if we didn't give her 3. This was a problem of overhype. GBF was being branded as a forum that wholesaled in ministers and every channel tried to demand 3-4 apiece.

One lesson I've learnt over my years



volunteering for IITBAA – you can try logic with anyone, but not with a distraught Jaya. If Jaya thinks ministers should be moved around on the screen like they do in video games, move them around. Hence, we ended with a situation where Shridhar was yet again typing out schedule changes and we repositioned the event to 3:30pm. And I prayed that Suresh could be persuaded to hang in till 4:30pm, Piyush would stretch his departure till 3:50pm and Nitin Gadkari's pilot would bhagao the aircraft and get him in just as Piyush was exiting. That way, we would give Shireen her 3 ministers (2 variable and 2 constant) and Jaya, her demand.

While I escorted Piyush away from the Shireen Bhan show to his departing car, I was relieved to see Raj Nair rushing in Nitin Gadkari. One was rushing out, the other was rushing in. Had there not been a divider in the stadium roads, they would have collided. So with relief, I escorted Nitin Gadkari upto the stage to sit where Piyush sat and answer questions from Shireen. Of course, Nitin was not supposed to speak in the show, so we hadn't told him about it, but I did manage to slip in

GBF was being branded as a forum that wholesaled in ministers and every channel tried to demand 3-4 apiece.



a word after he was seated and a question was being asked of him.

Nitin Gadkari was stellar. He stood out as a performer. He unveiled his plans to bring the highway project to 30 km per day. He went to the Environment SIG and spent more than an hour discussing projects and plans with engaged alumni. He then insisted on visiting each and every stall and watch demos, presentations and products. I then called him to the media room to share a tea with some of us. The main purpose was to cajole him to sing later in the evening where our Y-Point Orchestra was to perform. Attempts to induce him to sing failed, but he was happy to have tea, but with just one condition. "*Chai garam-garam rehni chahiye, to hi baat banegi.*" The challenge did not look so formidable. But I had forgotten that we had been performing badly in the tea/coffee department this whole day. And horror of horrors, the tea came in lukewarm enough for Gadkari to put the cup away in disgust. But he was still smiling and he joked that "*lagta hai ki aapke IIT mein chai garam karne ki technology perfect nahin hui hai.*" This was a fatal body blow. I felt crippled and helpless. But every contestant

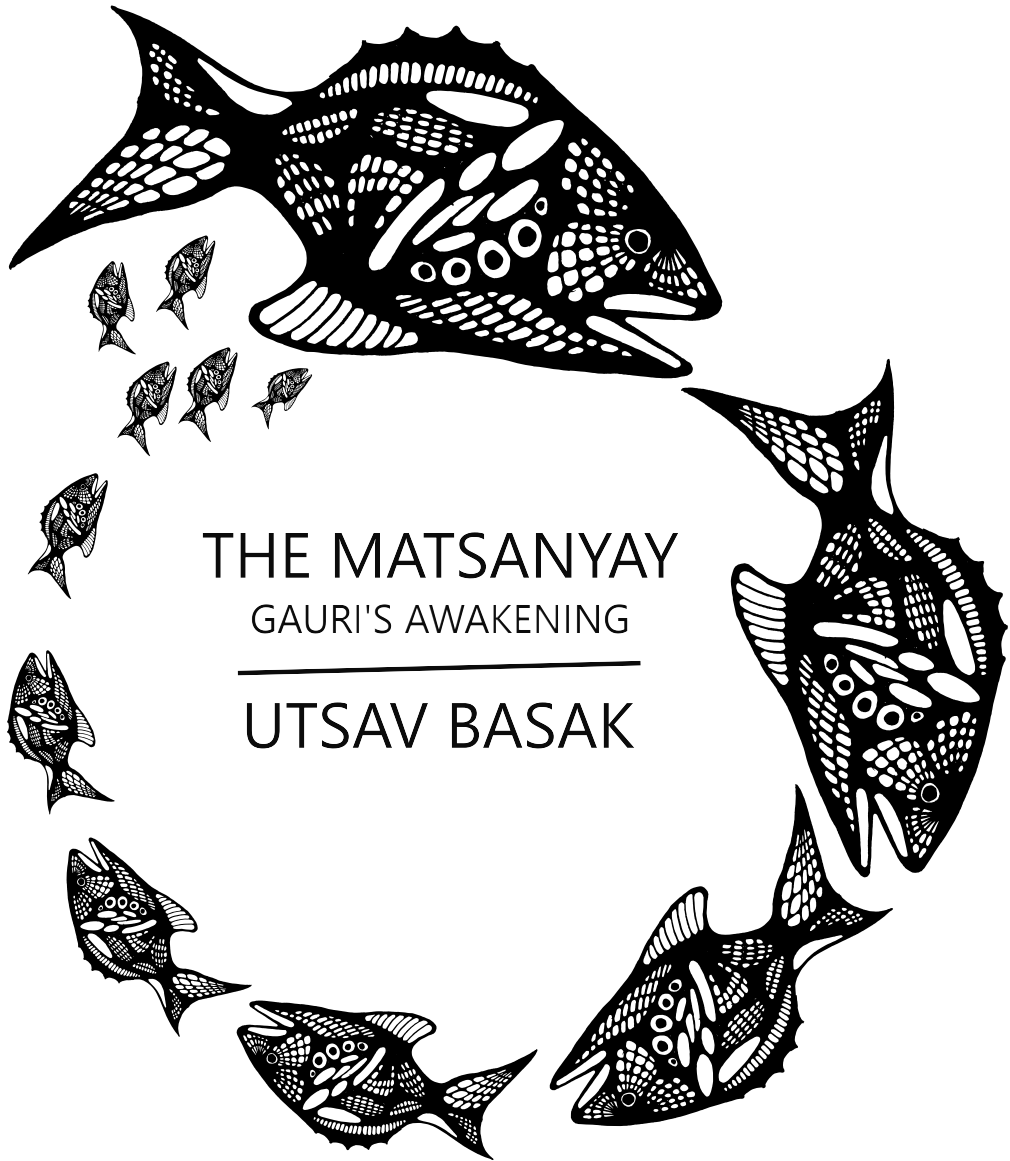
who gets knocked out in the ring says something while going down. So while going down, I blurted “Piyush Goyal was here sometime ago. He had a bad throat and he wanted hot water with honey, *loun*g, garlic and the works. And we had to cobble it in 10 minutes. And we managed to do that. If you give a complicated assignment to IITians, they’ll do that perfectly. But yes, we suck at simple things. Please give us a more challenging task next time.” Though it was like a “dying declaration”, this rebut seemed to please him and we awoke the next day to the news that Gadkari had pledged ₹ 50 crores for GBF ◦



Bakul Desai

CHEM.ENGG., 1982, H4

Bakul was infamous in his student years for many things. He is famous in the alumni community for many other achievements. What has not changed in all these years is his love for “faat-ing”. Similar examples of his unique brand of nonsense can be found in his book “H4 Madhouse: True Stories from the inmates of hostel 4”.



THE MATSANYAY

GAURI'S AWAKENING

UTSAV BASAK

A Village in Bengal: 739 AD

The coat of water that had formed a smooth layer on the dirty utensils reflected the sunlight onto Gauri's face. The silence of the lazy afternoon was broken only by the constant waves of the running water, and the birds that deemed fit to hum, undaunted by the stillness of the season. The mosquitoes had formed a swarm over her head. Clean-

ing the utensils had been her ritual since her mother died; her mother had done this throughout her life, at least from the time she knew her. She used to follow her around with a rag doll she had named Sonamukhi - then one fine day she dropped dead. The mourning period was short-lived and she was summoned to work the very next day. The Baniks expressed their remorse over her mother's

passing, but followed it up with the fact that her absence had caused a lot of difficulties for them - they had asked her, "Why didn't you come yesterday?"

Her answer had always been inconclusive; cleaning the utensils was her mother's job - not hers. How could everyone just assume that she would do the same thing her mother did? Times however were not in favour of asking opinions from those deemed fit to persecute. Gauri was perhaps subtly cognisant of this unwritten law - she never asked for it as part of her was afraid of the answer. There were far worse fates that claimed people like her. Her routine consisted of arriving at the banks at noon mainly to avoid the curious questions and scandal seeking behaviour of the local housewives who were all too eager to know the comings and goings of the local tax collectors; and then doing her job before departing. Gossip wasn't something that she had a taste for. In the eerie silence of the river bank, she could be herself and not worry about the possibilities that frightened her. However, this strategy didn't always work.

Such a day as today, when it didn't work became more apparent with a boy approaching from the distance. Not paying attention in such circumstances often solved the problem for her. But, this time his trajectory clearly spelt out that he was going to talk to her. She continued scrubbing the colander, as she slid her long locks away from her forehead with the gentle flick of her fingers. She held her gaze against him; normally boys behaved awkwardly when she locked eyes with them, but this one smiled back exuding a reassuring aura of confidence.

"That's a lot of pots and pans," he exclaimed, perching himself on a nearby boulder.

"They aren't mine, they are Chandramani Banik's." she replied, rather curtly.

"But that lot is enough to feed a small

army!"

"He has guests over!"

"From the north?" the boy asked with an air of nonchalance. Such words were often taken by those with less than pure intentions. She had been subjected to them before as well - by her father's friends. It didn't take long for small talk to mature into that indecent proposal.

"Yes, from Karnasuvarna!" She said, "And who are you? You haven't introduced yourself!"

"I am just part of this trading caravan that's passing by. I am also from Karnasuvarna, and we are going to Tamralipti. My name is Mitresh." His smile was infectious, for she too broke into a smile of her own.

"I am Gauri" she replied, although it seemed he wasn't really interested in her answer. He was too busy staring in the direction of the Banik Mansion. "What are you looking at?" she asked.

"You've worked here for long?" he asked, turning to look at her.

"Since my mother died." She had a speech prepared for such situations. People were classified into three categories in her mind after she passed this bit of information - there were those who were old enough to be her parents or were married; they normally expressed their concern for her, felt sorry for her, tried to console her, and then asked her whether they should help her find a husband. Then there were the bachelors closer to her age; if it was a boy, they would declare how they could protect her and she should marry him! And if it were a girl, that was worse; they expressed their concern, but then started blurting out experiences where they themselves had gone through a similar loss - how they had recovered and learnt to deal with it, even if it was the loss of a pet.

"Was it a painful death, or was it quick and painless?" The response caught her off-

guard. She definitely wasn't expecting this.

"She died overnight; she went to sleep and never woke up. I think my father killed her." Saying this was not her intention, but it was the sudden slip of tongue which made it the betrayer. There were thoughts that crossed her mind in this regard. But then that was the end of it; they were just thoughts - fleeting and momentary by nature. Her suspicions were her own, and the resulting opinions and hypothesis were never expressed or explored. Such thoughts had potential - too much potential. And whenever anything has too much potential, it incites fear.

Silence engulfed them as they sat, looking at each other; such disquiet was usually accompanied by a sense of unease. This one time however, the way he sat himself down on a boulder, resting his back to a tree letting his feet get swallowed by the unkempt green grass below, it was one of those rare moments when even silence broke character.

Finally, he nodded. "Do you know where these guests are staying?" he asked.

"The guest chambers are at the far end of the estate, behind the garden. It takes around 10 minutes to go there through the main mansion." She stalled; a bit irritated as she normally dreaded conversations where her mother came up. This time, she wanted him to come back to that topic.

"Was your mother a nice person?"

"Yes. She was the kindest and nicest woman of them all - I loved her! Why would you even ask that? Mothers are always nice!" She had a complaining tone.

"No. Mothers are humans; everyone in the world - they're all human. And as humans, we are all bound by desires, lust, anger, emotions! The animal kingdom has no concept of the seven sins; it's only humans that do! We made them up, to tell ourselves this is unnatural for any human being. The fact that we had to make them in the first place means that they are there, lurking in the depths of our

conscience. Be that of a mother, father, child, sibling, each and every one of us. Just like your father! But what puzzles me is why you're still with him. Why don't you run away?"

The mood had changed; the calming breeze that was so gently rocking the plants and grass stood still. "What will I do if I leave him? Where will I go?" replied Gauri.

"You choose to trust the devil you know than the devil you don't. That's also a human trait. I am not surprised."

"You are also human. Stop acting as if you're better than me. I am sure you have your flaws too." She tried to draw his attention. The calmness with which he was just looking around, and his disinterested demeanour was mocking her, albeit subtly.

"I'd say you should leave this place before....." He stopped, and turned to look at her.

"Before what?" asked Gauri.

"Before the demon's run." Mitresh stood up. That was a short yet stern reply following which he walked away. She couldn't ask any more questions.

It was evening when Gauri finally finished her chores. She was going to have to stay late - the mistress of the mansion had ordered her to. There was going to be a lot to do as another party was going to come after this one. She sat, surveying the assortment of fresh vegetables in the kitchen - another maid, Pahal, was busy cutting them.

"So how is your father?" Pahal's sudden comment caught her off-guard.

"What do you mean?" asked Gauri, trying to act normal. She knew what Pahal was hinting at and she dreaded the topic.

"I hear he is sick." Pahal looked at her with her eagle eyes; she was waiting to catch the tiny bit of hesitation on Gauri's part, allowing her to stitch a story out of her delicate movements.

"No. He is just down with a fever."

"Do you know about Suryakant? He was

your father's friend right? Died last week; the Vaidyas said it was Yaksman. Look out for symptoms."

Gauri knew what Pahal was implying - Yaksman was infectious, and falling victim to it meant death. "I will," she said - dismissing the conversation. She walked out to the animal pen, lest the Pahal's curiosity increased. It was a 5 minute walk, and she used to go there when she needed to collect her thoughts. She could see the sun shine a beautiful orange over the horizon as its rays shone against the undulating surface of the pond that was in front of her. The ducks were wobbling back - she sat on the grass with Mitresh's words ripe in her mind. She contemplated her life. What could have happened had she ever resisted? Would she be killed, like her mother? She had thought of getting married a few times before, and each time her father hadn't taken the initiative. Would she be better off if she were married? Her mother told her of marriage; she promised that she would find a great groom for her, and that how she'd run a household and have children. She never really allowed herself to think about it, but now that she did, it was unlikely that any of that was going to happen. 'Yaksman' she thought as her breath deepened; she thought of losing her father and life after. Marriage wouldn't be an easy option - trying to find a groom for an orphan was a fruitless occupation. No matter how hard she tried, she couldn't envision a future that was vastly different from what she was doing now; only that instead of giving her salary directly to her father it'd be given to her, and that way she wouldn't have to ask him for her hard earned money and be rebuked for it. Perhaps her father wanted to keep her around just for the money she was making. Her lips curved into a smile. If anyone could hear her thoughts, they would give her a scolding and then explain why fathers are to be respected and how they can do no wrong. Her father wasn't keeping well, but it wasn't Yaksman

- it couldn't be. If it were, why wasn't she infected? Her eyelids grew heavy and finally all those thoughts left her.

She rose up, startled by a smell - a mixture of burning wood and flesh. The sun had retired, and the moon had taken his place. Thick smoke emanated from the mansion and the shrieks from inside were being swallowed by the smoke that was billowing into the skies. The sky was now shielded by a veil of darkness as the smoke swallowed up the whole sky. It was utter confusion - she found that the cows had torn apart their harnesses and were running towards her. For a minute, she was ready to be stomped by them but they all ran past her. What was happening?

Her path into the outhouse, where the permanent servants stayed, was dark. As she tiptoed inside, her naked feet felt the touch of a dark and warm liquid. There was the odd frame of Nilratan, turned to his side with his back towards Gauri. Her mind went numb. She swallowed her spit and pressed on the hand, rolling it to its back. She almost puked. It was Nilratan - the cut was through the nose; half of the head lay attached to the spine; the other half separated itself and was sliding away, held by the thin strand of skin and cartilage at the back. She fell on her bottom; her legs straddled as she tried to collect her thoughts - suddenly Mitresh's words came back to her. 'The Demons Run' - Was this it? She was almost sure Mitresh was at the mansion. All rationality left her and curiosity took its place, for curiosity is perhaps the one primeval urge that is stronger than them all - the one that caused a million years of evolution. Her soft footsteps blended perfectly with the pandemonium that was surrounding her. Soon, there was a cry that made her blood run cold - Adrenaline rushed through her veins - fight or flight, stand or run? - She felt herself drawn to it; she felt herself drawn to Mitresh - What was he? Was he human? Was he a demon? As she neared, she brought herself to

a side, where the dense mangrove could give her some cover. And through the branches she could clearly see.

There were the guests, all wielding their weapons. They were about seven in total. Mitresh stood, sword drawn, in battle stance. Two guys, much older than him stood behind him - their stances were defensive. They were separated by the grass lawn. It was strange - the wall behind had thick dark smoke coming out tearing through the verdant woodland. There were unfettered flames, devouring hungrily, licking and lapping at the coppice, twisting and swaying in a dance without rhythm. A fiery mass of burning flesh suddenly ran out of the massacre behind them - it was the mistress of the house. Gauri recognised that sari. Two guys, similar in age to Mitresh ran behind her. She was screaming and burning as the flesh peeled off her skin. She was going straight for Mitresh, but before she could reach him, he reached for his sword and sank it through her heart. He grabbed her burning head and pulled her off the sword as it tore through her intestines. Then he kicked the body away. His sleeves burst out in flames but he stood, as if it didn't bother him; calm as ever, he shook his hand against the bark of a tree, dousing the fire.

"We are the emissaries of the Kingdom of Vardhaman, your insolence will be punished!" one of the guests roared.

The night fell silent - the fire crackled behind them, bellowing, casting long flickering shadows. The light cast by the flames danced across the dark trunks of the trees, twisting and curling in obscure shapes thereby providing a sombre radius of light. "I bear you no ill will," Mitresh stated, "The Matsanyay is upon us, and by the time I am done, the so called feeble commoners will be inheriting the earth, and the strong like you, will have to find a way to be common."

"There are just three of you and there are seven of us - you should've done the math

before spewing out tall words." A man on the other side smirked, slowly sliding his sword from his sheath. His jaw movement hinted that he hadn't finished devouring whatever he had put in his mouth.

"You should do as I say, and run away, for then you can preserve a little bit of the riches for yourself." Mitresh's stance changed. "But I guess that won't happen."

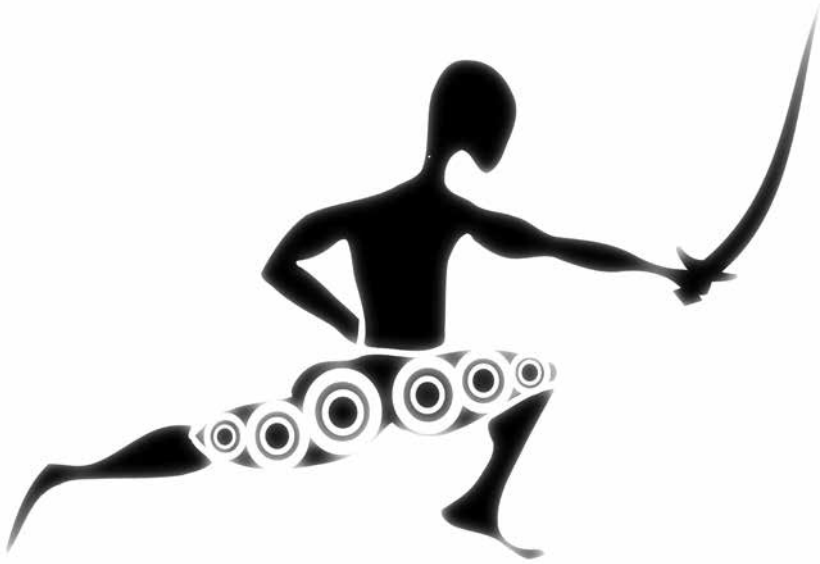
"You can't be more than 15 years old. And you think you can stop us?"

The animal kingdom has no concept of the seven sins; it's only humans that do! We made them up, to tell ourselves this is unnatural for any human being. The fact that we had to make them in the first place means that they are there, lurking in the depths of our conscience.



"The Puratan Sena says hello. Soon, the land between Gaud and Tamralipti will be unified, and there is nothing that your lords and their petty politics can do about it." There was a whisper in the wind. To Gauri, the whole scene seemed choreographed - the metallic instruments clashed against the other - Mitresh's silver gleamed - there was a quick roll back, and as his opponents sword ricocheted against his, his blade seeped through his opponent's shoulders and tore through his heart.

No more pleasantries were exchanged. Mitresh had reduced the opposition to three and a non-combatant. There were body parts strewn around the floor as the smoke turned black imitating the embers from a funeral pyre.



There was a minute of utter confusion - among the three warriors standing - two ran, along with the emissary that they vowed to protect. The other, eldest of them, stood firm. "I will not go easy on you boy." His coarse voice showed no signs of cowardice, but Gauri knew it wasn't the same voice that ordered her to serve the food earlier in the day.

The two men behind Mitresh followed after the runaways, but Mitresh stood. The size difference was amazing. Mitresh was young, not more than 15, and the other man was well above 40.

"You see these scars son - I've been fighting since before you were born." He slid his sword out - it was huge, bigger than Mitresh's. "You are still young. I don't know what this PuratanSena has told you, but if you come with me, I will take you to Vardhaman where you will be recognised for your talent. I don't want to kill a talented lad like you."

The answer he received was a cackle. "And in Vardhaman, what do I do? Serve under a lord? The strong shall rule, the weak shall serve, the Matsanyay has established that, don't you think? The big fish will eat the smaller ones which in turn will be eaten.

Right now, I am the biggest fish out there." He adjusted his stance again to the same one from before. He held his blade even, perfect and undaunted, levelled with his nose before slowly pulling back.

"And for god's sake..." Mitresh continued, "Don't show off your scars. They just tell of all the times you failed to stop a blade from breaking your skin."

The attack was immediate; when the best fight it out it doesn't take a lot of time to decide the winner. The first attack was predictable - Mitresh stepped to the left trying to secure an opening, his swing was caught in between by the sword. Mitresh's body was soaked with blood; the droplet that was clinging dangerously to the dishevelled locks of hair that was dangling upon his forehead broke free and kissed the ground. Another blow was coming, but it was blocked and deflected - here turned for a kill but he wasn't fast enough; the microsecond that was spent in deflecting Mitresh's sword and realigning for another blow was enough - his sword hand was severed, and he fell on the ground and that was when a gasp escaped Gauri. It was a murmur against the raging inferno's embers



that leaped and twirled in a fiery dance, but it did not escape Mitresh. She knew what had happened, and adrenaline sprayed through her as she felt her lungs almost burst and her feet launched her in a random direction. Mitresh had given chase, but she had been running this tract since she was a little girl - she jumped the creaks and crevices which were all too familiar to her, her young legs filled up with blood as she leapt through the muddy unkempt road like an antelope with Mitresh close behind. Her loose hair fluttered in the wind behind her and alas that was her undoing. She felt a tug and she stopped; it was the end of the line.

“Where do you think you are going? To your father? The one who killed your mother? Why?”

“Please let me go, I won’t tell anyone, I promise!” Her lips quivered. She was sobbing by then.

“I don’t care who you tell it to; I’ll just kill them all, but remember this - you’re not doing anyone a favour by being the weak little girl you are.” And with that, the grip on her hair loosened. She didn’t wait; she ran, but after a few yards, she slowed down and her frantic flight turned into an amble. The moon was

wary of this event it seemed, for it intensified its radiance, illuminating her path with a golden brown hue. Her feet’s affair with the road was an old one - she had never worn any sort of footwear in her life, and as a result, her feet remembered all the curves and crevices that decorated the road; they moved almost automatically, navigating the dust road and the un-flattened rocks that stood out against the terrain couldn’t do enough to even earn themselves a tiniest speck of attention. The soles of her feet knew the terrain by themselves, each time her bare soles kissed the earth embracing its roughness it exchanged secret messages with them. The moon followed her, peeking through the branches of the few banyans and peepals that stood scattered across the grassland. The tall shadows of the grassland flickered along the path in front of her, adorning its brownish bright path with dark uneven stripes. Unconsciously, she wedged her anchal between her hips and the sari, as she tried to retain her pace. She took a fleeting look at the huts as she passed them by, and that was all it took to ascertain that they didn’t have any signs of movement, or light for that matter. The darkness inside was repulsive. There was

a strange sensation that crept up her spine each time she noticed one, however it was not fear, of that much she was sure. It was just a trigger that heightened her sense of vigilance. The howls continued and the twigs rustled. By now, she felt a strange rhythm emerge from the crickets as their seemingly haphazard cries came together to form a symphony. She sauntered to her hut.

That night, Gauri found herself in a precarious situation. She sat cross-legged on the

For curiosity is perhaps the one primeval urge that is stronger than them all - the one that caused a million years of evolution.



steps of her cottage. Calling it a cottage would be an overstatement - it was a just an assembly of mud and straw, and a poor one at even that. The kalbaisakhis had taken most of the mud layers with it; The straws and reeds of the roof rustled at the sudden breeze, threatening to give in, being held together scarcely by the ropes. But barring that, the night was remarkably still. She slid her legs, stretching them on the earthen porch, as she let her back rest against the wall just beside the door. It was difficult to say what she was thinking; again was she thinking about anything at all? The fence around the house was worn out. The disrepair that had set in wasn't an overnight phenomenon, but then again it couldn't be avoided. A fresh round of crickets started chirping their song, as she lifted her eyes to take in a glimpse of the magnificent sky above. It was a long time since she had taken the time to watch the stars so inquisitively. When she was young she used to give each of these stars names, and watch them while dissecting their movements. Those were the abodes of the gods, her mother had told her, and she was convinced that they were moving because

some god was having a banquet and had invited the others, but then why didn't they converge? It must have been some mystical reason that she wasn't meant to know. Initially, she kept up her inspection hoping that a god might stray one day and descend; she had heard in the epics that one could bargain with gods to get boons and that was exactly her plan. But to her dismay the gods seemed to be too professional for they never diverged from their intended paths! Now, though, she knew better. The hoot from a distant owl broke her reverie; she shook her head, scrubbed her eyes as she let out a yawn as her hazy gaze fell upon the undergrowth that had been growing on the land just outside the fence. The path that led out of the hut had almost completely been obfuscated by it. She collected the end of the anchal that was carelessly scraping the ground and draped it around her breasts as she took to her feet. She stretched her neck, hoping to see any activity at the Nilratan's hut, which was atleast half a kilometre away. Whatever little was visible against the banana grove gave her a picture of complete stillness. She closed her eyes, said a prayer and turned around to catch a glimpse of what was going on inside her own hut; she had been ignoring the groans that were coming from it long enough now.

As she stepped inside, she took great care so that she didn't step on anything; she had the scheme of the hut firm in her mind but she didn't like taking chances, for after her father became delirious, he would throw whatever he could find wherever he would feel. She would not be surprised if she stepped on the old man himself. She lit a small lantern. The light was faint, barely able to ward off the darkness inside. Her father's eyes were half closed as he lay in the middle of the hut. His ribs turned visible as he inhaled slowly, trying hard to capture every last bit of air as if it were a rare luxury. As he groaned and coughed, any other girl of her age would shiver at the sight, but not

Gauri; she had seen this way too many times before. The same sight, the same sequence of events - she had seen in almost every hut in the village. At first the occasional chest pains developed, depriving the individual of normal activities, then came the coughs followed by irregular fevers and before long the snot turned reddish. And well, it always led to the same finale! But this time the situation was supposed to be different. This time, the victim was her father. She tiptoed past him; the gentle flame flickered as she shook her hands to balance herself; the golden yellow light was proving to be a disturbing combination against the bluish hue of the moon that made its way through the small window at the corner.

She silently went over to the dirt bed that held up a small clay model of a one eyed goddess. She noticed that the offerings of fruits and flowers in front of the idol had gone bad. But it failed to concern her; she sat beside the miniature bastion, which also held other smaller depictions of gods in clay. With her back against the wall and her legs pressed against her chest she gawked at the panting skeleton of a man in the centre, she realized that it was only a matter of time before death claimed him. Now that she thought about the inevitability of it, a strange sense of calmness overcame her. He was holding onto Sonamukhi, her half burnt rag doll; God knows why; its head had been torn off, a result of his frequent destructive fits of rage. She remembered it vividly even to this day. It was one fine evening in Maagh and he had stormed in after a drinking session with his friends. Her mother gave her a small pitcher and asked her to go fill it up. As she returned she could hear her mother pleading with him. She slowly strode towards the outer fence. In the yard lay her mother's best saris, all going up in flames as her mother frantically pranced around the fire trying to set it off. She clearly remembered the red one. It was the one that her mother had promised to give her in mar-



riage. She left the pitcher and rushed to lend her mother a hand. That was when her father, knowing Sonamukhi was her favourite, tore off her head and threw it into the fire as well.

“Gauri” her reminiscing came to an end with the call of her name. She shook her head, startled at the sudden disruption of the silence, “Get me some water!” Her father’s voice was hoarse, broken beyond recognition yet it tried to be intimidating; there wasn’t much movement in his posture, the tick-tock sound that emanated as his elbows shook uncontrollably hitting the earthen floor, was the only indication that he wasn’t dead yet. She sat up, hesitatingly; the same black pitcher was sitting at the corner just below the window. Her eyes met her father’s as she made her way to it. She halted in between to examine his half eyed gaze. Now that she thought about it, her father had never apologized for what he did over the years; perhaps it was this apology she was searching for that was keeping her here. She looked in his eyes hoping to find it, but she couldn’t make anything out of it. His face was too expressionless. It was perhaps the longest she kept her gaze against him. If it were some other time, he would have slapped

her. She finally arrived at the pitcher, as she reached around for a glass, the man started off again, “What’s taking so long you whore!”

Something in Gauri broke; she had retrieved the glass by now, but she found her grip loosening involuntarily. She watched as the glass slipped from her hand and rolled over to the makeshift cabinet, disappearing in the darkness. She turned around to look at him; he was mumbling now; some she understood, others were incoherent, but it was obvious the words weren’t pleasant to hear. At first she thought what she felt was rage, but then realized it wasn’t rage. Rather, it was a sense of exhilarating triumph, suddenly she no longer felt intimidated, no longer felt bound to what she was told to do. She lowered the mouth of the pitcher, very carefully without making any sound, for any sound other than the ripples of water was harmful to the aura she suddenly possessed. As the pitcher’s mouth touched the ground a stream of water flowed out onto the floor, and obeying the law of the slope made its way to the near corner of the hut. A sense of victory came upon her as the sombre expression on her face suddenly changed making way for a triumphant smile; she had won, she was standing when all around her had fallen; she felt indestructible as she broke the stream of water with her toes and dragged, changing its course so that it went just past her father’s face.

“Help yourself old man.” She said, the mockery clear in her tone as she went over to the cabinet from before and took out a box lined with ivory, which was the last of what she owned. She took great precaution as she wiped away the dust that had accumulated on it over the past few days. She opened it to review its contents, turning the bottles that it contained with great affection.

“I knew you were the spawn of the devil you...bitch.....I will.....” Her father’s voice was cut off by another series of coughs.

“I know father, and guess what? It’s

Matsanyay, and I am the last one standing! How could I have asked for anything more?” She deliberately sweetened her voice, as she turned around for the final time and picked up her pace. She didn’t turn back once. It was over, and she had won.

Bit of history: Karnasuvarna, present day Murshidabad. It was also the capital of Anga, the territory handed over to Karna by Duryodhana, in the epic Mahabharata.

Tamralipti: Present day Tamluk, one of the richest ports of Bengal at that time, famed for exporting silk and spices to the Roman empire. ◦



Utsav Basak

Utsav was a budding historian (operating in the grey area between mythology and history) before engineering happened where he became fascinated by coding! He is currently pursuing his MBA from IIT Bombay, School of Management. His fixations include films and photography, and when time permits he gets his hands dirty making short films and directing plays. He obsesses over technology, and his wanderlust has led him to many places that are well off the beaten path.

An Open Letter on the Use and Abuse of Language

TINKERBEE

Dear all,

I have been following campus discussions on the use of language and appropriateness of language with animated interest. This epistolary conversation follows my own interest in the relation between languages, and giving space to the *grotesque* in languages and cultures. I hope I am not read as a *holier-than-thou* preacher or as a new advocate of a new censorship (“intolerance” as they say) through this article. We have the revered and loved *IIT Lingo* that is a set of words and abbreviations that are unique to each IIT. They are interesting identity markers and they lend an aura of casualness in the strict limitations of academics. However, of late I am observing a move from the “lingo” to a more unpleasant-on-the-ears kind of public usage of cuss words. To my mind, there is something that still lurks between the *official* and the *unofficial*. There is something which is *allowed* and in fact encouraged in hostel and our room premises, but we tend to leave those words and terms in hostels and our individual chat rooms as we go to our labs, offices, and public places. This article emerges from anguish and from a concern regarding the use of cuss words in ‘official’ spaces.

Yesterday as I was about to start discussions in my class, the moment I turned around to face the white-board, I encountered this statement clearly etched out on the white board: “Maths is *Fucking* Awesome”. I have

been coming across the use of expletives in many other social and individual contexts in different campuses. They have defined the *freedom* and *autonomy* of students. While I deeply admire and respect the sentiments of freedom of speech, of anonymity, and of creative dissent, I could not resist getting into an animated conversation with my class for a while regarding the appropriateness of *cuss* words and if it is alright to be using these words as a part of public display of our emotions. Why not? They are also a part of language and a way of expressing our anger and frustration. Why not? These words make us sound bold and cool. Why not? After all, our movies *Delhi Belly*, *No One Killed Jessica*, *Mardaani*... all use words that are *fucking* awesome! While using the word *fucking* in this article (believe me I am doing this for the first time in any article I have written so far), I felt my adrenaline rush, it gave me a high as it perhaps does for other users. In fact, I have been wondering, does that make me sound *cool* and *sexy*? This point reminds me of a similar conversation I had with a scholar years ago. The scholar insisted that in order to be called an *intellectual* you *should* be a social drinker. My rebuttal was “if I have to take to drinking as a personal choice, I might go for it but if I *have* to get a licence to be called an intellectual *only* through drinking, I rather not be branded as an intellectual”. Perhaps, expletives usage is one such intoxication. The more

we use them, the more we want to use these words in both written and spoken diktats. We never know at what point of time, the words that sounded cool during college days, might brand us as abusers in the long run, when we use the same words against our wife/husband, children, friends, or colleagues. At that point of time, we might regret the same words that once made us feel proud about ourselves and gave us a high. Such is the ambiguous role of language.

This article emerges from anguish and from a concern regarding the use of cuss words in 'official' spaces.



As someone who teaches Literature and at times Language to students, this overwhelming use of cuss words in college corridors, classrooms, television shows, sounds plain awkward to my ears. Maybe I come from an *old* school of thought, with an idea that if I have to kill someone, I have to know my language well and I have to write better. I do not subscribe to the view of the formal reducing itself to the level of ludicrous without achieving any purpose. At the risk of sounding pedantic, I beg to cite a few pieces of writing. In conventional British literature studies, there is an age called the Age of Satire (eighteenth century), led by people like John Dryden and Alexander Pope, with biting satirical pieces like *Absalom Achitophel* and *Rape of the Lock* that satirised the functioning of the British monarchy and other socio-cultural aspects of their time. However, there is not a single *fuck* or *f**** (whatever form you may choose) word in there. They shook the foundations of the British monarchy with just one or two long satirical pieces. Mahatma Gandhi's writings can be looked at as pieces of high quality satire; *Hind Swaraj* is an excellent example in this context. Gandhi can be *fucking awesome*

or he can be *simply brilliant*. The choice of words and expressions is ours, but the reception of the reader or the listener is their own. Take another example of the poet named P. B. Shelly who was expelled from Oxford because of a 13 page pamphlet *Necessity of Atheism*. Legends say, Shelly scared *the s**** out of Oxford (or may we say "Shelly antagonised Oxford in an unprecedented example of satire"?), without using even one cuss word, so far that he had to be expelled from college. My point through these instances is that if cuss words do not serve any purpose in written or spoken form in official premises, do we really need to use them? There is a thin line of demarcation between trivialising and critiquing, and sadly, I am getting the vibe of an abject trivialising through the use of expletives in many Indian academic campuses, than actually helping us to develop an original critique. We are learning to acquire a few terms, a few theories, a few linguistic and cultural insights in bits and pieces, and instead of getting intrigued by the need for more, we land up being satiated by these crumbs and use them to our own sweet purposes. Seems as if our society needs par-blind intellectuals who can see only one side of the moon, so that generation after generation we live with similar intellectual and spiritual parasitic tendencies, depending on other parts of the world to provide us nourishment instead of developing our own path.

I have been a regular on social network sites, and when I perch on one or the other site, I enjoy reading the conversation against courses, "profs", "admin" and so on. In fact, I feel elated that students can actually raise their voice in a fearless, uncensored manner and can actually help in changing systems. However, of late when I read the comments on some of these sites, they sound downright *popcorn-goonish* to me. Social sites are places where our actions are observed by people who might *covet* for the place and the time that we are living in. Sadly when I perch on certain

pages, I feel quashed to pulp, not by the brilliance, but by the abjection of language that many among us use in public spaces. In the medieval times in European theory, we studied a beautiful phenomenon called the *grotesque*. However, the *grotesque* was practiced only in the carnival square not in the official spaces of even the medieval world.

Indians have been a victim of linguistic imperialism for centuries, in the nineteenth and twentieth century by “British-English” and in

In the medieval times in European theory, we studied a beautiful phenomenon called the grotesque. However, the grotesque was practiced only in the carnival square not in the official spaces of even the medieval world.



the twenty-first century by Americanisation of English language. As someone who observes these phenomena closely, I feel helpless as a mute spectator watching the changes of our times and their times.

Therefore, as a teacher if I have ascribed in any form to the use of cuss words either in written or oral conversation, as a way of sounding cool, kindly accept my public apology. ◦



Tinkerbee

A new bee of the bee-town, Tinkerbee loves tinkering around with forms of writing and is in quest for new genres of creativity. An alumni of the batch of 2010 IIT Bombay (Department of Humanities and Social Sciences), the Tinkerbee researched on the theories of Mikbail Bakhtin and the fiction of Amitav Ghosh for her doctoral degree. She is currently working as Assistant Professor in Humanities at IIT Gandhinagar. The Tinkerbee has a passion to explore intersections between literature and philosophy, between theory and practice, and between life and creativity. She believes that a little compassion and some poetry in life can make the world a better place to live.





Alibaba in Sindbad Land

It is a memory that has faded but keeps coming back occasionally. A giant sea-monster rises from the ocean and leaps for the sailor, who jumps out of its claws in the nick of time and whips out his cutlass and sinks it into the monster. The sound of metal cutting through the cloth-skin of the studio dummy gave away the make-believe, but this final scene from the children's film 'Sindbad The Sailor' has stayed with me since I watched it on a Sunday morning in New Talkies on Hill Road in Bandra, more than half a century ago.

I was reminded of it again as I filled out a frequent flyer application form on an Oman Air flight to enrol as a Sindbad member, since I have become one in the past few months. Sadly, Sindbad now roams the skies not the seas. But there are dangers lurking in the skies today as they were once in the seas.

So what happens to IIT professors when they retire? I had vague plans to travel by road and see the country from the comfort of my car, as much of it as my pension and the cost of petrol would allow. But stuff happens. So now I am in a place where petrol is cheap, the roads are great and the countryside is spectacular, but they won't let me drive. Not until I pass their rigorous, multi-stage, driving test after waiting patiently for weeks to

get a date. I am now at Dhofar University in Salalah, Oman with a mandate to make their College of Engineering the 'IIT Bombay of Oman'. It is the first and only university in the Dhofar region, the province that was literally the 'wild west' of Oman until recently. The convocation guests come dressed to the hilt, i.e., with a *khanjer* belted around the waist. But I have not seen a more polite and warm set of VIPs, their *khanjers* notwithstanding. At a recent conference, a high-ranking but youthful member of the Sultan's family was the chief guest. When the vice-chancellor completed his welcome address and was returning to his seat, the royal personage stood up in greeting. I wonder who among the present scions of our 'royal' families would show such respect to a mere university teacher. I do recall one of them pronouncing summarily that 'those who can do, those who cannot, teach'.

The students at Dhofar University (DU) are almost all first generation college goers, and for many of them English is their third language, the second being Arabic and the first Jebali. The medium of instruction at DU is English, so the challenges for the students and the teachers are not unfamiliar to someone coming from India. But what I did not expect was the reception I got from many of

them. I had been warned that students will often come to you with all kinds of unreasonable requests (so what's new?), please be firm with them. During the first few weeks I had a string of visitors in spotless white *dishdasha* (ankle-length robe) and *kamma* (cloth cap with embroidery) greeting me from the door, 'Salam alaikum – kayfbalik', and walk up to me and shake my hand. Like I had been warned, I greeted them with cautious warmth, asking them to take a seat and waiting for them to state their 'problem'. But I soon realised that they were merely coming to greet the new Dean from India and make him feel welcome. Or perhaps to size him up. Many of them have full-time jobs and are taking evening classes to upgrade their diplomas into bachelor's degrees in Engineering. One day a gentleman, perhaps in his forties, speaking fluent English (so could not be a student), came to see me about a problem with registration. I assumed it was for his daughter, since she was not accompanying him. He corrected me, 'No, it is for my wife. We have four children and now the youngest one has started school, so she has decided to join college and get a degree in Engineering'. I could have taken my *kamma* off to him, if I was wearing one. And to top it, he said his job required him to be in Muscat, so his wife was living with his family in Salalah – *kamma* off to her too, and his supportive extended family.

Salalah is the second largest city in Oman, with a population of under 200,000. In a country with just over four million people, it can count as a city, but to a native of Mumbai it's more like the population of Powai scattered all over the island of Mumbai. The hills that flank Salalah on one side are called 'mountains'—the Ghats in miniature really, but the sea that flanks it on the other side is pure azure glass like you will never get to see in Mumbai. The people are friendly and generous like one will sometimes meet in Mumbai, and one can get by with Hindi and

English like one can in Mumbai. The temperatures are a shade lower than in Mumbai throughout the year and so is the humidity. Beef is advertised and sold openly – unlike in Mumbai, and Amul butter is widely available – like in Mumbai. I am the only person taking an early morning walk around the campus, no one to disturb my train of thoughts with a greeting or a wave of hand – unlike Mumbai. The roads are neatly paved, no potholes to watch out for – unlike Mumbai. But the few trees on campus are merely ornamental, unlike the thick rainforest that is our campus – in Mumbai.

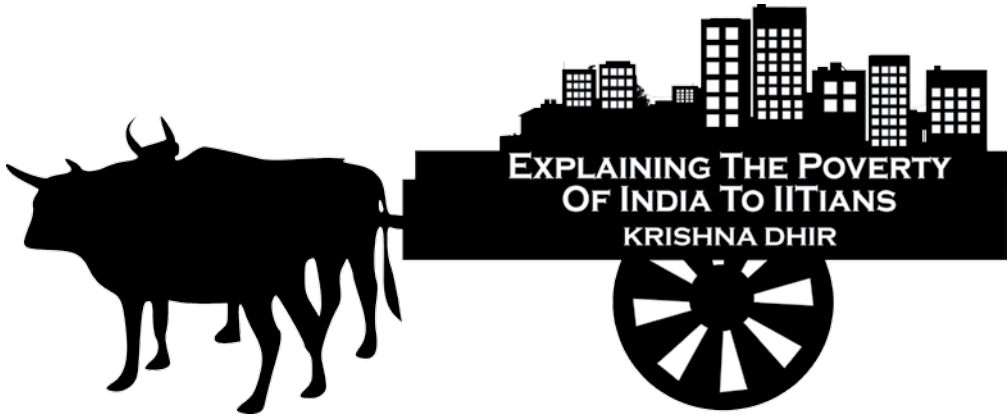
I started this column with the thought of writing about life in Salalah and the people and culture of Oman. But I think I will do that another time. There is something else that is distracting me right now.

I suppose you have guessed it—I am missing *Amchi* Mumbai. ◦



Prof. Aliasgar Contractor
M.SC. '73 CHEM, PH.D '78
CHEM, H- 9

Prof. Aliasgar Qutub Contractor, former HoD of Chemistry Department, and former Dean Alumni and Corporate Relations, IIT Bombay. At present, Ali is serving as Professor and Dean of the College of Engineering, Dhofar University (Salalah, Oman). Endowed with a rare gift of narrating "serious" and "heavy" matters with a tongue held firmly in cheek, his incisive and informed views on IIT Bombay and alumni relations are in evidence in his column Sim Sim khul ja. He is currently 40 thieves short of his target.



Introduction

When India attained its independence, Bhagwati Charan Verma wrote a poem, भैसागाड़ी, using the metaphor of a slow-moving, creaking bullock-cart to describe the impact of India's economic progress on the poor, debt-ridden, village-dwelling farmer. The poem is strikingly visual! One can almost see and hear the bullock-cart trembling and creaking as it creeps along:¹

हिलती-डुलती, हँफती-कंपती, कुछरुक-रुककर, कुछसिहर-सिहर

चरमर- चरमर- चूँ- चरर- मररजारहीचलीभैसागाड़ी
*Trembling, panting, stopping and moving,
shaking unsteadily,*

*Creaking, groaning and moaning, crawls
along the bullock cart.*²

The purpose of this article is two-fold: (1) To make IITians aware of the need to invent and design technologies that benefit rural India and lift the most vulnerable cohort of India's population, the small-scale farmers, out of poverty; and (2) for IITians to be schooled in the liberal arts that focus on Indian literature as a basis for intellectual development, with keen awareness of the needs of their countrymen, especially in rural India.

This article is organised as follows: first, it describes the impressive scale of India's devel-

opmental challenges, both, in the rural-agrarian sector and the urban-industrial sector. Then, it describes how India has adopted large-scale technological projects to address these challenges. Among these projects is the building of dams. This is no accident. Water is the most valuable resource for socio-economic development in any society. India's thirst for water is enormous.

The article moves on to acknowledge the difficulty of assessing the impact of development on the poor, partly because poverty is a relative concept. Nevertheless, India's developmental planners have placed engineering and technology at the centre of its large-scale solutions. The Indian Institutes of Technology (IITs) were developed to bring the best technical aptitudes to bear on such development.

The challenge for those who educate the IITians, then, is this: how to instil in their charges an appreciation for the problems of the poor? The article at hand explores the effect of large, industrial scale projects on the small-scale rural farmers. The dams that are designed to bring prosperity to the farmers, and the rest of India, exact a heavy price from the poorer rural cohorts. Dams displace the most vulnerable of them, destroy their cashless economy through inundation, and force them to compete in a cash-based economy with no skills, just their labour. Industrial scale projects are not always suitable for the improvement of their lot.

¹ Bhagwati Charan Verma, भैसागाड़ी, Kavita-kosh, http://www.kavitakosh.org//kk/भैसागाड़ी/_/भगवतीचरण_वर्मा. Seen on November 10, 2015.

² All Hindi to English translations are by the author.

In our times, India is experiencing the heart-wrenching phenomenon of farmers committing suicides across the entire country, despite the progress being made across Indian cities. It is amazing how relevant Bhagwati Charan Verma's poem, भैसागाड़ी, remains today, in light of the shocking persistence of farmer-suicides. The poem captures the plight of a farmer, devoid of hope, in haunting detail:³

भैसागाड़ी पर लदा हुआ, जा रहा चला मानव जर्जर
है उसे चुकाना सूद, कर्ज है उसे चुकाना अपना कर
जितना खाली है उसका घर उतना खाली उसका अंतर
औं कठिन भूख की जलन लिये नर बैठा है बनकर पत्थर

*Aboard the bullock cart, a ruined man,
bankrupt,*

*Rides. Indebted, his earnings are short of
owed interest.*

*His soul is empty as much as the emptiness of
his home.*

*With flames of trying hunger, the man burns
like stone.*

It is very difficult to design technologies for a group of people, unless one feels their pain. This article suggests that literature is the window through which to see and feel that pain. It suggests that the education of IITians should include familiarity with the works of such literary titans who have grasped and understood the plight and suffering of India's poor. Such literature exists in every language of India. In this article, the example of *Godaan*, the work of Munshi Premchand, is offered as an illustration of this possibility.

Finally, this article suggests certain modifications in the curriculum of IITians to better orient the students to the challenges of poverty eradication.

The Scale of the Challenge and Available Resources

The challenge that confronted Indian engineers was articulated with remarkable clarity

at the very eve of India's independence. In his 'Tryst with Destiny' speech, Jawaharlal Nehru told the new nation, "The service of India means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity."⁴ He went on to state, "The ambition of the greatest man of our generation has been to wipe every tear from every eye. That may be beyond us, but as long as there are tears and suffering, so long our work will not be over." To comprehend the scope of this challenge, it is essential that we understand the scale of India.

Today India has 1.28 billion citizens, accounting for more than one-sixth of the world's population. According to the 2011 census of India, 27.8% of Indian population is spread across more than 5,100 towns and over 380 urban communities. The remaining 72.2% lives in rural areas in 641,000 villages and is engaged in agriculture and related sectors. In 2011, India had 53 urban communities with a population of over 1 million, accounting for 43% of all urban population.⁵ According to the World Bank, as of 2010, only 36.3% of India's total agricultural land was reliably irrigated.⁶ Soil erosion, water-logging and salinity affect about 60 percent of the cultivated land in India. Although well-endowed with a system of rivers, India's need for water outstrips its availability: 92 million people do not have access to safe drinking water; 304 million Indians do not have access to electricity.

4 "Great speeches of the 20th century". *The Guardian*. 8 February 2008; <http://www.theguardian.com/theguardian/series/greatspeeches>. Seen on November 10, 2015.

5 List of million-plus urban agglomerations in India, Wikipedia. https://en.wikipedia.org/wiki/List_of_million-plus_urban_agglomerations_in_India. Seen on November 10, 2015.

6 Agricultural irrigated land (% of total agricultural land), The World Bank. <http://data.worldbank.org/indicator/AG.LND.IRIG.AG.ZS/countries>. Seen on November 10, 2015.

3 Bhagwati Charan Verma, भैसागाड़ी, Kavita-kosh, http://www.kavitakosh.org/kk/भैसागाड़ी/_/भगवतीचरण_वर्मा. Seen on November 10, 2015.

ty. The southwest monsoon accounts for 70% of India's rainfall. Its disruption threatens the livelihood of 600 million people.⁷ India has enormous need of building and other materials such as steel, cement, chemicals. Correspondingly, it needs sources of energy. Production of all these requires water, lots of water. In 2008, India was the 6th largest producer of hydroelectric power in the world, accounting for 3.5% of the world's total production. However, its current installed capacity of about 42,000 megawatts is only 15.22% of the total electricity generation in India.⁸ The scale of India is a global scale that requires not only vast amounts of natural resources, such as water, but also human resources that will creatively solve the needs of the country.

Fortunately, India is not devoid of both, human and natural resources. The nature of human resources needed by India is rooted in the nature of India's society. It is remarkable that with all its ethnic, religious and linguistic diversity, India has managed to develop and consolidate a deep-rooted democratic structure that guarantees peaceful transfer of political power, professional armed and paramilitary forces that are loyal to the people and the government they elect, a judiciary that proactively safeguards the rights of the people, and a deep sense of national identity that pervades its citizens. In certain respects, India has favourable natural resources as well. India accounts for only 2.4% of the world's land area. Yet, it is endowed with about 1.7 million sq km of arable land, which is more than what is available to any other country except the United States. It has over half a million sq

km of irrigated land. India's water area, too, exceeds what is available to any other country with the exception of Canada and the United States.

Heroic Solutions

When the western world brought about the industrial revolution, a colonised India was ill-positioned to exploit it. If anything, in India the industrial revolution was exploited for the benefit of its colonial rulers, the British. For instance, India's railway system was first designed to facilitate movement of goods to be shipped to Britain. Once India attained independence, it embarked enthusiastically and optimistically on large scale developmental projects, such as building of dams, mining of coal, and production of building materials such as steel and cement. It sought heroic, industrial scale solutions to its developmental challenges, sweeping aside Gandhian approach of development based on cottage industries. Nehru listened to Keynes.

The longest rivers associated with India are the Brahmaputra and Indus, which are both 2,896 km long, although neither is entirely within India. Other major rivers are the Ganga (Ganges, 2,525 km), Godavari (1,465 km), Kaveri (Cauvery, 800 km), Krishna (1,401 km), Mahanadi (851 km), Narmada (1,312 km), and Yamuna (1,370 km). India quickly and aggressively proceeded on a policy of developing hydroelectric power derived from dams across the country. Dams built across these rivers would bring enormous benefits to the farmers; they would conserve water for drinking, provide much-needed irrigation to the farmlands, produce energy, control floods, and increase farm production. Industries, too, would benefit and so would urban centres. In mid-2015, India already had about 42,000 megawatts of installed capacity, accounting for over 15% of its total electricity generation.⁹

7 Eduardo Porter, "India is caught in a climate change quandary," *The New York Times*, November 10, 2015, http://www.nytimes.com/2015/11/11/business/economy/india-is-caught-in-a-climate-change-quandary.html?_r=0. Seen on November 10, 2015.

8 Hydroelectric power in India, Wikipedia. https://en.m.wikipedia.org/wiki/Hydroelectric_power_in_India. Seen on November 10, 2015.

9 Hydroelectric power in India, Wikipedia.



Among the earliest river valley development schemes undertaken by India was the construction of Bhakra-Nangal multipurpose dams, spanning the Sutlej. It consists of the Bhakra dam, and Nangal dam downstream from it. The work on the Bhakra-Nangal dams started in 1946, before India became independent, and was completed in 1963. Jawaharlal Nehru, who acknowledged India's abject poverty in his *Discovery of India*, published in 1946, famously described the completed Bhakra-Nangal dams as "new temple of resurgent India." At 741 ft, the Bhakra dam is among the highest gravity dams in the world, comparable to the 743 ft tall Hoover Dam in the United States. With the flow control by the Nangal dam downstream, irrigation is provided to 40,000 sq km of farms in Himachal Pradesh, Punjab, Haryana, and Rajasthan.¹⁰ The system provides 1478.72 megawatts of electric power to these states

https://en.wikipedia.org/wiki/Hydroelectric_power_in_India. Seen on November 10, 2015.

¹⁰ Bhakra Dam, Wikipedia. https://en.wikipedia.org/wiki/Bhakra_Dam. Seen on November 10, 2015.

and to Chandigarh and Delhi as well.¹¹The construction of the Bhakra-Nangal dam relied on both, advanced technologies of mechanised precision, and manual labour of vast numbers of erstwhile farmers and other men and women who were accustomed to working in the fields.

A major hydroelectric project underway today is development of the Narmada as a major water and power resource. The 40.96 cubic km of water that flows through this

It is very difficult to design technologies for a group of people, unless one feels their pain.



river annually exceeds the cumulative flows of Ravi, Beas, and Sutlej, that feed the Indus basin!¹² Narmada River flows from east of Jabalpur in the heart of Madhya Pradesh, meandering westward through Maharashtra and Gujarat, emptying into the Gulf of Khambhat. Its journey of 1,312 km makes it the largest westward flowing river in India and the fifth largest in the country. To exploit the developmental potential of the Narmada River, the Government of India has instituted the Narmada Valley Dam Project that seeks to build a series of 30 large dams along the river. Additionally, there will be 135 medium sized dams and about 3,000 smaller dams. This system of dams could provide water to as many as 40 million people, irrigate nearly 6 million hectares of land and produce 1450 megawatts

¹¹ Bhakra Nangal Dam. <http://bhakranangal-dam.com/>. Seen on November 10, 2015.

¹² Narmada River, Wikipedia. https://en.wikipedia.org/wiki/Narmada_River. Seen on November 11, 2015.

of power.^{13,14}

The assessment of the benefits derived from these projects in alleviating the poverty of the farmer requires a benchmark for the measurement of poverty. Defining poverty in India has remained a challenge. It is easy to recognise its existence. But, it is difficult to measure, especially when those doing the measuring are bureaucrats or technocrats, not themselves poor.

Defining Poverty Remains a Challenge

Defining poverty in India has been a contentious exercise. In 1943, while India was still ruled by the British, the Bengal Famine resulted in deaths of three million of Indians due to starvation and disease.¹⁵ Such was the severity of destitution in northeast and east India that entire villages became extinct! This happened despite increased agricultural output in southern India. Prior to 1943, too, India experienced famines every 5 to 8 years through the late 19th and early 20th century. Until 2005, poverty continued to be thought of in terms of food security. Computations were made on the basis of calories required for survival and corresponding income needed to purchase those calories. In 1970s and 80s, poverty was used to create political slogans during election seasons. As per India's official poverty line in

1970s, the country's rural poverty rate exceeded 50%. By 1990s, there was little reliability of poverty estimates, partly due to differences in the methodology being deployed. For instance, one source reported that in 1994 35% Indians lived below poverty line, while another source reported the figure to be 77% in late 1990s.¹⁶

The definition of poverty continues to be controversial in India. In 2005, India adopted Suresh Tendulkar methodology for computation of poverty. This method moved away from computing poverty in terms of calories needed for survival to a basket of goods used in rural and urban regions that is minimally essential for such existence. Based on this, the Tendulkar Panel recommended in 2011-12 that India's poverty line be fixed at ₹27 in rural areas and ₹33 in urban areas. These were the levels at which obtaining two meals a day could be a challenge. According to the Tendulkar method of computation, 25.7% of rural India and 13.7% of urban India was below the poverty line, with 21.92% of India's total population, or 270 million citizens, being poor. In 2014, a new panel, headed by Chakravarthi Rangarajan, revised Tendulkar Panel's poverty lines from ₹27 to ₹32 in rural areas and from ₹33 to ₹47 in urban areas. This resulted in 363 million Indians, or 29.5% of the total population, being classified as poor, an increase of 35% over Tendulkar Panel's estimates. According to the revision, the number of urban Indians below the poverty line is 102.5 million, not 53 million estimated by the earlier panel.¹⁷ In 1990, the World Bank, too, revised its definition of poverty. It set a

13 Nisha Kapadia (2004). "India's Greatest Planned Environmental Disaster: The Narmada Valley Dam Projects". Environmental Justice Case Studies Series. Ann Arbor, Michigan: School of Natural Resources and Environment, University of Michigan. Seen on September 20, 2010 at: <http://www.umich.edu/~snre492/Jones/narmada.html>.

14 Smita Narula (2008). *The Story of Narmada Bachao Andolan: Human Rights in the Global Economy and Struggle against the World Bank*. Working Paper No. 08-62, Public Law and Legal Theory Research Paper Series. New York, NY: School of Law, New York University. Seen on September 20, 2010 at: <http://ssrn.com/abstract=1315459/>.

15 Madhushree Mukherjee (2010). *Churchill's Secret War: The British Empire and the Ravaging of India during World War II*. New York: Basic Books.

16 Poverty in India, Wikipedia. https://en.wikipedia.org/wiki/Poverty_in_India. Seen on November 12, 2015

17 Mahendra K. Singh (2014) "New poverty line: Rs 32 in villages, Rs 47 in cities" *The Times of India*, July 7, 2014. <http://timesofindia.indiatimes.com/india/New-poverty-line-Rs-32-in-villages-Rs-47-in-cities/articleshow/37920441.cms>. Seen on November 12, 2015

benchmark of US\$1.00 per day income, based on the purchasing power parity. This figure was changed to US\$ 1.25 per day as the international poverty line for 2005 through 2013.¹⁸ Based on this benchmark, the World Bank estimated that in 2011 India had 276 million living below the international poverty line.¹⁹

The Cult of the IITians

In 1946, Nehru wrote of the appalling poverty of undivided India, "... there was lack of food, of clothing, of housing and of every other essential requirement of human existence ..."²⁰ He believed that technology would be critical to solving India's poverty. Jawaharlal Nehru was convinced that engineering and technology were essential to India's advancement. Also, he had no doubt that Indians would advance in science and technology. Recognising the need for high quality technical human resources, Indian leaders such as Humayun Kabir, Sir Jogendra Singh and Dr. Bidhan Chandra Roy responded to Sir Ardeshir Dalal's pre-independence vision, and formed the Sir Nalini Ranjan Sarkar Committee to prepare a proposal for technical education in India.²¹ Their work led to the establishment of the first Indian Institute

18 Martin Ravallion, Shaohua Chen and Prem-Sangraula (2008). "Dollar a Day Revisited." *The World Bank*. https://openknowledge.worldbank.org/bitstream/handle/10986/4499/wber_23_2_163.pdf?sequence=1. Seen on November 12, 2015.

19 The World Bank (2015). *A measured approach to ending poverty and boosting shared prosperity*. World Bank Group. p. 50. <https://openknowledge.worldbank.org/bitstream/handle/10986/20384/9781464803611.pdf>. Seen on November 12, 2015.

20 Lord Blackett of Chelsea (1971). *Aspects of India's Development*. Fourth in a series of Lectures in memory of Jawaharlal Nehru. Delivered at the Royal Society on 7th December 1971. https://www.cambridgetrust.org/assets/documents/Lecture_4.pdf. Seen on November 11, 2015.

21 The history of Indian Institutes of Technology, Wikipedia. https://en.wikipedia.org/wiki/History_of_Indian_Institutes_of_Technology. Seen on November 11, 2015.

of Technology (IIT) in Kharagpur in 1951. Subsequently, the second IIT was established in Bombay in 1958, followed by the third in Kanpur and the fourth in Madras, both in 1959. Already there are 16 IITs in the country. The establishment of these institutions, along with a host of other engineering and technical institutions, anticipated the enormous need for technical human resources for the development of the country.

Educators entrusted with determination of

It is remarkable that with all its ethnic, religious and linguistic diversity, India has managed to develop and consolidate a deep-rooted democratic structure that guarantees peaceful transfer of political power, professional armed and paramilitary forces that are loyal to the people and the government they elect, a judiciary that proactively safeguards the rights of the people, and a deep sense of national identity that pervades its citizens.



content, design, and delivery of the curriculum that prepared technical professionals face enormous challenges. They are responsible for the development of individuals, whose works affect humanity no less than the practice of professionals whose fields are based on life and social sciences, such as medicine and psychology. The works of engineers, management scientists and decision makers have life and death implications for members of society no less than the work of medical doctors and

others. The curriculum designers and teachers of various engineering fields seek to impart a vast range of competencies to students, within the limited period of time the students spend at their institute or university. These competencies include the ability to apply functional knowledge of mathematics, sciences, and engineering; design and implement controlled experiments in addition to making natural observations, from which to collect and analyse meaningful data; and, design systems and

The definition of poverty continues to be controversial in India. In 2005, India adopted Suresh Tendulkar methodology for computation of poverty. This method moved away from computing poverty in terms of calories needed for survival to a basket of goods used in rural and urban regions that is minimally essential for such existence.



processes with functional capacities, within economic, environmental, social, political, health and safety, manufacturability, sustainability, and ethical constraints. Additionally, the graduate professionals are expected to understand the histories, aspirations, and human condition of the people affected by their works and creation.

Students are subjected to a highly demanding screening process for admission to the IITs and other exceptional technical institutions and universities of India, to guarantee a high degree of scientific, technical and engineering aptitude. IITs admit less than two percent of aspiring students. How are these students to be sensitised to the impact that heroic engi-

neering and technical solutions might have on the most vulnerable segments of the society? Nehru worried whether Indian engineers would remain focused on the task of advancing the country towards prosperity for all. In 1959, he fretted and wondered, “Gaining power through industrial processes, will they lose themselves in the quest of individual wealth and soft living?”²² The implication for education of engineers was clear. Nehru wanted to link “the scientific approach” of engineering with “the urge for creation, the urge to make and produce new things for the common good.” Engineering and technical curriculum in India needed to be rooted in liberal arts and humanities. The need was for there to be a balance in the professional, the personal, and the practical sense of engineering solutions. As they set out to seek creative solutions to India’s challenges, Indian engineers needed to be reflective practitioners, who had a positive attitude and personal relationships with those affected.

It is often acknowledged that in their mission and design, IITs took inspiration from the finest institutions in the West, including the Massachusetts Institute of Technology, Carnegie Mellon University, Cornell University, Georgia Institute of Technology, and such. While we have tended to emulate western, mostly American, institutions in the designing of India’s technical education, need we do the same to educate our engineers in liberal arts and humanities disciplines? While the short history of the United States and the British colonies in North America can reasonably be stretched out to about four centuries, the experience of the civilization of the Indian subcontinent can be traced back at least about 5,000

²² Lord Blackett of Chelsea (1971). *Aspects of India’s Development*. Fourth in a series of Lectures in memory of Jawaharlal Nehru. Delivered at the Royal Society on 7th December 1971. https://www.cambridgetrust.org/assets/documents/Lecture_4.pdf. Seen on November 11, 2015.

years! The earliest remains of ancient India show a highly advanced form of culture, great trading communities, coinage, huge walled cities, strategically designed functional and defensive fortifications, and well-developed social structures.²³ In 321-296 BC, Kautilya had already discussed public administration strategies to manage a wide range of human conditions in his work on the science of polity called the *Arthashastra*. Liberal arts education of Indian engineers should take full benefit of the literature of the West, but not at the cost of neglecting India's own rich experience. Let us first consider what impact India's modern industrial scale development has on the poor.

Understanding the Burden of the Poor

Much of the progress that impacts the farmer comes from building of dams. Hundreds of dams have been built in India since it became independent. However, dam building has a dark side. In the process of providing irrigation to vast areas of land, producing much needed energy to fuel the growing industrial appetite of the country, providing much needed drinking water, controlling devastating floods, and bringing about India's green revolution, dams inundate land and displace people, and destroy their cultures and way of life. Besides being immensely expensive, dams destroy ecosystems, social structures, economic systems and so on.²⁴ The Bhakra-Nangal project submerged 17,800 hectares of land drowning 371 villages including Bhakra itself. These displaced 36,000 people in 7,206 families. Of these, 5,027 families took cash compensation and left the area, their lives changed forever. The remaining population was resettled within the area. Additional 4,000

were displaced when the township of Bilaspur was submerged.²⁵ Whether the displaced leave the area or stay, they are forced to give up their cashless society and made to compete in cash-based economic systems, generally ill-suited for survival in resulting industrial centres, with inadequate capacities and skills, and lost social status. To them it does not matter how the policy makers compute how many in India are poor.

The Narmada River basin is home to

Whether the displaced leave the area or stay, they are forced to give up their cashless society and made to compete in cash-based economic systems, generally ill-suited for survival in resulting industrial centres, with inadequate capacities and skills, and lost social status.



nearly 21 million people. Its largest dam, the Sardar Sarovar dam, will submerge 37,000 hectares of land in Gujarat, Maharashtra, and Madhya Pradesh. According to unofficial estimates, the Sardar Sarovar dam alone has displaced 320,000 people.²⁶ As with all dams, these, too, will displace the most vulnerable population, the small-scale farmers, whose lands will be submerged and traditional, often cashless, lifestyles will be destroyed. In the name of "national interest," "public inter-

²³ Basham, A. L. (2004). *The Wonder That was India*. London: Picador.

²⁴ Ravi Hemadri (1999). "Dams, Displacement, Policy and Law in India." Prepared for *Thematic Review 1.3: Displacement, Resettlement, Rehabilitation, Reparation and Development*. Cape Town: South Africa: World Commission on Dams.

²⁵ Ramesh Bhatia and R.P.S. Malik (2008). "Bhakra multipurpose dam system, India," In Ramesh Bhatia, Rita Cestti, Monica Scatista and R.P.S. Malik (eds), *Indirect Economic Impacts of Dams: Case Studies from India, Egypt, and Brazil*. New Delhi: Academic Foundation.

²⁶ Narmada Valley Project, <http://coe.mse.ac.in/nm.htm>

est” and “greater good,” these poor become poorer. The consequences of dam-building are usually unjust to the displaced. Once again, Bhagwati Charan Verma effectively describes the hardship of a poor farmer struggling to survive and support his family:²⁷

पशु बनकर नर पिस रहे जहाँ, नारियाँ जन रहीं हैं गुलाम,
पैदा होना फिर मर जाना, बस यह लोगों का एक काम !
था वहीं कटा दो दिन पहले गेहूँ का छोटा एक खेत !

... ..

... ..

वह था उसका ही खेत, जिसे उसने उन पिछले चार माह,
अपने शोणित को सुखा-सुखा, भर-भरकर अपनी विवश
आह,

तैयार किया था और घर में थी रही रुग्ण पत्नी कराह !

*Where men in labour grind, women are
bonded slaves,*

*Where the cycle of birth and death persistently
prevail,*

*There, just two days ago, was a tiny wheatfield
harvested*

... ..

... ..

*It was that very farmer's field, who, for these
past four months*

*Had nurtured it with his blood, and countless
futile sighs,*

*Worked the field, while at home, his ill wife
groaned in pain.*

Devoid of hope, farmers consider terminating their lives. In 2014, 5650 farmers in India committed suicide. In 2012, however, the rate was higher. While 60% of India depended on the agricultural sector, farmer suicides accounted for 11.2% of all those who chose to terminate their own lives in India. That amounted to 13,755 farmers out of a total of 135,445 people who committed suicide. Various factors have been cited as contributing to incidences of suicides, including debt, alcohol addiction, low produce prices, stress, apathy, poor irrigation, cost of cultivation,

crop failures, and others. Indebtedness and loss of economic status are major risk factors for farmers opting to kill themselves.²⁸

To understand the human condition of India's poor, IITians would do well to become familiar with the works of Indian literary titans, who have observed and effectively captured the needs, aspirations, struggles, and pain of India's poor. One such great writer is Dhanpat Rai Srivastav, better known to many as Munshi Premchand. He was born in 1880, nine years before Jawaharlal Nehru. Premchand died in 1936, merely 56 years old, just a couple of months before Edward VIII abdicated as King of the United Kingdom and Emperor of India. Indians regarded Munshi Premchand as *Upanyas Samrat*, or the “Emperor of Novels.” He authored over a dozen of novels, about 250 short stories, several essays and translations of foreign works into Hindi. His political awareness was influenced by Gopal Krishna Gokhale, Bal Gangadhar Tilak, and Mahatma Gandhi. The social experiences that shaped his life came through living in Kanpur, Gorakhpur, Benaras, and very briefly in Mumbai. He passed away just as he was being recognised as one of the greatest writers of Hindi literature. The year he died, he was elected as the first President of the Progressive Writers' Association in Lucknow. The same year he published his most celebrated work, *गोदान (Godaan)*, or ‘The Gift of the Cow,’ a novel that explores the socio-economic deprivation and exploitation of a poor farmer. Regarded by many as one of the finest examples of Hindi literature, this book was published mere three years before John Steinbeck published another classic, *The Grapes of Wrath*, a powerful work about the poverty of a tenant farmer fighting deprivation and exploitation, and searching for dignity on the other side of the globe, during the period of the Great

27 Bhagwati Charan Verma, भैसागाड़ी, Kavita-kosh, http://www.kavitakosh.org//kk/भैसागाड़ी_/भगवतीचरण_वर्मा. Seen on November 10, 2015.

28 Farmers' suicides in India, Wikipedia, https://en.wikipedia.org/wiki/Farmers%27_suicides_in_India. Seen on November 12, 2015.

Depression in the United States.

The story of *Godaan* revolves around acquisition of a cow by a poor farmer, Hori, who is motivated by his desire to satisfy his devoted wife's dream of owning one, just as other respectable farmers do. To make the acquisition, Hori takes on a debt. Thus begins a chain of events affecting interactions between him and his relatives, affected by greed, jealousy, suspicion, and the ongoing effort to live an upright life in dignity. Hori's younger brother, in a fit of jealousy, poisons the cow. It dies. The poor farmer takes an additional loan to bribe the police to save his brother from the law. Then, his son impregnates and elopes with a child-widow of another caste. Another loan is taken to pay off the penalties imposed by village elders. Other challenges follow, such as the payment to the priest at the wedding of his daughter. His debts multiply. His health deteriorates due to overwork, stress, and worry. As he finally dies, his goals and desires are partially met. The novel takes on a number of social issues. These include caste segregation and exploitation, interpersonal relationships complicated by external social trends, exploitation of women, adverse impact of industrialisation, and the impact of the urban population on the rural farmer.²⁹

A Suggestion for the Education of IITians

Recently, Jairam Ramesh, a graduate of IIT Bombay, who was the Minister of Environment in Prime Minister Manmohan Singh's government, stated that India must continue to grow at 7.5 to 8% a year for the next 15 years. Already, India's electricity consumption accounts for over half of its greenhouse gas emissions. Nuclear energy is unlikely to provide the extra power needed. In an interview, Mr Ramesh told the New York Times reporter Eduardo Porter that, "By 2030 India's coal consumption could triple or quadruple." India

hopes to produce 40% of its electricity from non-fossil fuels by 2030. It would also like to increase its forest cover substantially. These are highly ambitious goals. Mr Ramesh exhorts the country to be aggressive, stating, "India must view the era of the green economy not as a threat to its developmental plans ... Instead, it must be viewed as an opportunity to build and demonstrate technological capability to the world."³⁰ The burden of bringing such ambitions to reality will fall on IITians and their contemporary engineers.

There exists an excellent opportunity in the IIT curriculum to effectively familiarise the students with the needs of India's poor. Each student at IIT Bombay must develop a thesis toward partial fulfilment of the respective degree requirements. This thesis plays a critical role in the education of an IITian by forcing the student to reflect on the acquired knowledge. It has been said that we do not learn from an experience per se, but rather from our reflecting on that experience. Commonly a technical or design problem is assigned to the student. Usually, this problem describes an industrial challenge. For instance, a student aspiring to a BTech in chemical engineering might design a plant and process of manufacture of some chemical product needed by the society. As an alternative, the problems assigned to the students for such purposes should demand reflection not only on the acquired technical knowledge but also on their liberal arts and humanities education. Assignments could be drawn from a range of issues confronting the small-scale farmer and other village dwellers. A student hoping to be awarded a BTech in civil engineering could be asked to design a series of small-scale, local

²⁹ Premchand, Wikipedia. <https://en.wikipedia.org/wiki/Premchand>. Seen on November 12, 2015.

³⁰ Eduardo Porter, "India is caught in a climate change quandary," *The New York Times*, November 10, 2015, http://www.nytimes.com/2015/11/11/business/economy/india-is-caught-in-a-climate-change-quandary.html?_r=0. Seen on November 10, 2015.

or regional dams to replace a single colossal structure that would flood numerous communities in one go; or design localised renewable energy sources based on, say, solar or bio-gas technologies to work the farms. Students working toward their BTech in electrical engineering might be assigned the task of developing solar-energy based robotic-technologies applied to control infestation by pests, such as rodents. To encourage buy-in from the farmers, the students should be exhorted to come up with cost-effective and simple solutions to the assigned problems. Simplicity would enhance understanding by the farmers and would produce solutions that are deemed elegant by them! Additionally, students could be encouraged to fulfil their summer training requirements through practical experiences in India's villages. This would bring them into direct contact with the population cohort that needs their attention. Motivating students through competitions and awards to develop technologies for rural India might even lead to start of lucrative ventures!

India can meet the 21st century as a modern developed country with a healthy economy only if it lifts the living standard of all its citizens, including the poor in the rural areas. IITs are central to finding working technical solutions that meet the needs of rural India. These solutions must be based on the immediate as well as long-term needs of those living in rural communities. It is imperative that the education of IITians expands to include India-centred liberal arts that can enrich and give direction to their technical studies and point technical solutions to the urgent needs of the rural poor in India, today. At the heart of their efforts, IITians must remember both, Nida Fazli's admonition, alluding to Nehru's *Discovery of India*,³¹ in reference to his own discovery at a railway station:³²

स्टेशनपरखत्मकीभारततेरीखोज
नेहरूनेलिखानहींकुलीकेसरकाबोझ

*At the station, O India,
Your search I did end!
Nehru did not write about
The burden on the coolie's head!*

And Munnawwar Rana's reminder that one is not poor by choice³³

बोझ उठानाशौककहाँहै, मजबूरीकासौदाहै
रहते-रहतेइस्टेशनपरलोगकुलीहोजातेहैं
*Burdens are carried not for sport,
Not for pleasure, but coerced.
At the station persistently
Subsisting men become coolies.* ●

ajabgjab.com/2013/11/collection-of-nida-fazliis-dohe.html. Seen on November 10, 2015.

³³ Munnawwar Rana. <http://www.kavitakosh.org/mrana>. Seen on November 27, 2015.



Krishna Dhir
BTECH, CHEM E, '66, H6

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³¹ Jawaharlal Nehru (1946). *The Discovery of India*. Oxford University Press.

³² Collection of Nida Fazli's dohe. <http://www.>



I am Bankim Biswas and what I write is a lot of bunkum and wishwash. I specialise in “then” and “now” scenarios. But I get confused whenever I visit Delhi. It’s always then, then-er, and then-est there. There’s not “now” there. Not even a “know”. Just kowtow caught in a time warp that started from an ancient Indraprastha and ended in an almost medieval Lutyens. You can Cafe-coffee-day outside a Qutb Minar or Reebok outside the Red Fort. It’s all sarkar, darbar and all-out-war in Delhi’s belly and its multiple underbellies.

Some say that the Delhi weather is much like its people. Jekylls by the day and Hydes by the night. In mid February, it’s bearably hot before sundown and unbearably chilly after. Delhi is nice actually. Broad tree lined roads that intersect at right angles, quiet laid back bungalows that open into vast gardens. We are talking about Lutyen’s Delhi and not the Dilli you don’t get to see while driving from the airport to India International Centre.

IIC-designed by an American architect Joseph Stein still retains its old world charm. Liberal use of firebricks in the elevation and broken china mosaic on dome shaped structures in the roof. Profile is curvilinear. Reminds you of Waheeda Rehman who was unparalleled in her heydays, but wrinkled now.

So is this edifice. Crumbling and falling apart here and there with tell-tale signs of attempted restoration and maintenance manifesting themselves in the guest rooms. The open spaces, gardens, walkways, fountains and the overall ambience continue to remain spectacular though.

Despite this, a stay at IIC is value for money. Central heating system works well. While you smoke in the morning in the balcony in the morning chill, you can watch squirrels scurrying up and down the trees outside. Breakfast in the dining hall offers you a lavish spread of multiple options. American, Continental, North Indian, and South Indian ways of having breakfast while you read the Hindustan Times and look out into lush green surroundings.

My room was booked through the good offices of a friend who was an environmentalist, cycling enthusiast, perennial blood donor, and explorer of stem cell technology. He asked his historian friend cum IIC member Beeba Sobti to book my room. Beeba can lead you into the Lodi garden and explain every nook and corner even when she’s blindfolded.

My friend was not exaggerating when he told me that average age of members of IIC was 78. A foundation stone plaque informs us that Vice President Radhakrishnan inaugurat-

ed this place on 2 Magh, 1883 in what sounds like a Vikram Samvat era dating protocol. Transliterates into 22nd Jan, 1962. Emperor Akihito, then a simple crown prince, had visited this site in 1960. IIC was born out of a brainstorming session between Radhakrishnan and John Rockefeller III. Executors were eminent Indians like CD Deshmukh, Kamaladevi Chattopadhyay, Pt. H. N. Kunzru, Professor Humayun Kabir, Dr. V. K. R. V. Rao, Raja Ram, Dr. Malcolm S. Adiseshiah, and Prem Kirpal.

Not surprising then to see most visitors in white French beards and white ponytails and some, with white skin too and more often than not, ambling in with the help of walking sticks. If you want to relive moments from the 70s and reconnect with past history, IIC is where you can see it all. People wearing waistcoats and double breasted jackets abound here. When did you last see a waistcoat other than in Shammi Kapoor movies? And yes, one can even espy members smoking a pipe. No less than MP Pawan Varma who was seen smoking a pipe some 6 feet away from a “No Smoking” sign.



Missed catching a glimpse of Maharaja Karan Singh, supposedly a notorious regular at IIC. (Post script to this line: Caught the Maharaja walking out of the luncheon room during my next visit. Walked limply, but without a walking stick. Carried a paperback in his hand. Kashmiri topi still intact.) Watched the others in the verandah abutting the fountains, sipping Darjeeling tea and munching at cookies; looking listlessly into the garden, perhaps mulling over days gone by when they must have argued about policies and initiatives energetically when IIC was a happening place and not a brooders’ roost that it had now become. The seminar room was bubbling with activity though. A signboard announced that a discussion on “Urban Poverty” was in progress. Participants were pouring out from Mercedes Benzs and BMWs, wearing Gucci loafers and Tommy Hilfiger shirts, brandishing ipads. But there were some participants who wore waistcoats and carried files and folders tucked under their arm. This was a classic example of fusion. Of the young and the old. The trendy and the vintage. Wannabee and has-been. All trying to unite to fight something called urban poverty. But the great uniter was the TV screen in the reception area which was showing the India Pakistan World Cup clash. The argumentative Indians decided to suspend their spats and join in a spontaneous applause for Team India’s 6th-out-of-6 straight victory against Pakistan in the World Cup.

IIC has a cute library with “silence please” and “no smoking” signs. There’s a cuter nook which serves some 195 dailies and periodicals from all over the world. Have you ever read Assam Tribune, Daily Excelsior, Deccan Herald, Gomantak Times, India Daily, Kashmir Herald, Kashmir Times, Navhind Times, Pragativadi, Telegraph India, Assam Chronicle, Dinakaran, Greater Kashmir, Malayalam Times, Oherald, Samaya, The Bihar Times, The Northeast Tribune, The Sentinel and the like? You must. You’ll hear voices from all over

India reaching out and telling Delhi to please listen. I missed my own Hyderabad's Deccan Chronicle when I was boarding the flight to Dilli. But I caught it in this library where it was couriered before it was delivered to my home.

My friend, of the environmental fame, is also a founder member of India Habitat Centre and that's where we walked to for beer and lunch. IHC, also designed by Stein – albeit in the 90s – is clearly the happening place of the moment. Structure is far more imposing and in the design. You can see Stein's evolution as an architect: changed from curves and arches to straight no-nonsense lines; clay brick facade coupled with a futuristic truss design for the roof. Just 5 mins walk away from IIC, IHC is clearly the successful NRI son of the ageing, retiring desi dad called IIC.

In IHC, in its plush rooms and surroundings, between loud Punjabis stabbing into paneer and Patialas, you can find some rare photos of Nehru, Shastri and Moraji Desai. The photo outside the loo of the 6th floor's Deli-o-deli restaurant proves that Nehru was into Swachh Bharat and toilet inspections long before Modi was. There are also original replicas of the Parliament elevation, both front and back, pasted behind privileged tables at IHC. Somehow, they look better than the original Parliament and their current motor mouth residents.

The jury is out. If you want to meet vintage journo's and retired attorney generals, scrap with them in the quaint bar at IIC and play hockey with walking sticks and a 50p coin. You cannot get a 50p coin anywhere else, not even in Kejriwal's WagonR that never was. If you want to hug and kiss the air around the cheeks of buxom Dilli women, you can do that at IHC after they've downed their Vodka with a Dahi Puri starter.

IHC also has a library. Better, because it has a green marbled sit out where you can smoke at eye level with vultures (of the bird

kind). But its periodical offering is an edition of post Tarun Tejpal's Tehelka. Crying out for attention to say "I exist". Cogito ergo sum from apologists who are trying to ignore an infamous lift and an equally infamous episode in Goa during a think festival. One can think through pants in Goa and fight back in Dilli via IHC. But the Gomantak Times edition in IIC can fell you to the ground. Your libido, your narcissism, your carnal lust can cost you your fortune. Come on, you're not Emperor Jehangir.

We are talking about Lutyen's Delhi and not the Dilli you don't get to see while driving from the airport to India International Centre.



I called the Honourable Raksha Mantri next day early morning before other early callers got a stake on his precious time. I was not early enough, because the Honourable Raksha Mantri asked me to drop in at 1PM. There is a reason he's called Raksha Mantri and not Defense Minister. Apparently, Mulayam Singh Yadav – a past occupant of this powerful post – did not like being called DM. Reminded him of District Magistrates in his native UP. So DM became RM while the ministry continues to be called Ministry of Defence and not Raksha Mantralaya.

Salute to Lutyens! What a brilliant architect. South Block, North Block, and Viceregal Palace turned Rashtrapati Bhavan. Each is a classic masterpiece. Imposing colonnades and facade lined with buff and red sandstone from Dholpur. Clearly, this Lutyens was someone who knew his geometry, symmetry, proportion and balance coupled with a vision to create something imposing and inspiring. My cab crossed Ministries of Defence and Foreign Affairs and finally stopped at PMO Gate No

4, only to be told by the impatient sentry that Gate 11 could be accessed from the backside. A typical Indian trait, move roundabout and do things from the back. Behind the scenes, eh?

Chaos in the parking area at the back reminded me that Lutyens was dead and gone and someone else had taken to designing a backside parking lot. The number of people wanting to visit South Block in cars is definitely more than Lutyens would have imagined. Clearly, Indians have not yet learnt how to create a path broad enough for 2 cars to cross each other without respectfully brushing each other's sides. Parking is half parallel and half perpendicular to show that there are 2 types of Indians. The compliant and the rebellious. We reached Gate No 11 with a lot of struggle. Mercifully, Gates were numbered in proper ascending order. 5 to 11 via 6,7,8,9, and 10.

There were 3 ferocious looking men guarding Gate 11. I got out of the car and announced my name. The 3 tigers suddenly turned into meek lambs and clicked their heels into attention-much like the "Saavdhan" we learnt during NCC. They saluted and said "Jai Hind!" in unison. One of them added a "Sat Sri Akal!". I looked at him. Yes, he was a Sikh. I was not sure about the protocol of reciprocating greetings. So I replied with a loud "Jai Hind!" sans the salute and the Saavdhan drill. The Sardar pointed in a northerly direction and mumbled just one word. "Reception."

Bolstered by the patriotic salutations, I walked confidently to the reception with my laptop bag. The reception was clearly a later day contamination. Aluminium frame with a sliding scratched glass door looked as out of place in a Lutyen's masterpiece as some past RMs must have looked in this edifice.

Guys at the reception did an encore. Saluted me with Jai Hinds. One tall guy asked another tall guy to take "Sirjee" i.e. me to the "Lambu Jat" who had my "advance pass"

with him. This was a glimpse into Dilli's sarkari and darbari politics. Guys measured by their heights and caste and not by name. Lambu Jat wore a badge that proclaimed him to be Veerender Singh and was a few inches shorter than the guys who called him Lambu. Not so Lambu, but quite Jat going by his coarse and rugged features. My first lesson learnt in South Block – "Don't try to look for logic in corridors of power." Sorry, make it the second lesson. First lesson came back to me fast enough. This Lutyens was a genius who created forecourts, courtyards, wide stairwells, and neat spaces that delighted the eye and the mind.

Jat took me through a narrow corridor that was painted white with beautiful oil paintings of slain soldiers adorning the walls. Most were Lance Naiks and Subedars. I tried guessing the castes and figured that most must have been Gurkhas. Suddenly, the lilting melodies from a Lata Mangeshkar classic started playing in my head. "Koi Jat, Koi Sikh, Koi Maratha. Koi Gurkha, koi Madrasi." I looked left and right and looked each painting in the eye and started saluting each one in my mind while whispering "Jai Hind!". Like Lutyens, this painter too was a genius. He awoke the patriot in me and made me realise that I was walking on my feet because the Sipahi laid his life to rest in cold bloody wars. Felt a tad filmy. A bit like Manoj Kumar and his Jai Jawan and Jai Kisan ideology.

The narrow corridor ended in a lift and Jat handed me to another guy with a salute in his hand and a Jai Hind on his lips and he took me to the first floor. He was to be my last escort and had instructions to take me to a stately room with wooden floor, a sandstone fireplace, beige drapes, 2 massive and classic oil paintings. There were opulent and cushiony sofas in one corner and a huge oak table with an LCD screen on the other. The room was straight out of Tudor/Windsor and guaranteed to let your jaw fall in awe. I was

escorted to the sofa with another man dropping in with a Jai Hind salute who asked me if I wanted tea or coffee and who also turned on the AC.

In this room reeking of pomp and opulence, I espied something. That's when it hit me. The painting on the left was of valiant soldiers who had reclaimed Tiger Hill during the Kargil war. The painting on the right was of the memorable surrender signed by Major General Niazi before Lt. Gen Jagjit Singh Aurora in Dhaka on 16-Dec-71. I could not hold it any longer. I walked up to both paintings, clicked my heels in attention, saluted and proclaimed a loud and an unequivocal "Jai Hind!". Did not care if secret cams recorded



my embarrassing emotional drama.

Saluting and Jai Hind-ing had invaded my DNA and I did not refuse the offer of a tea when it was asked again by someone who was obviously not a Jat. Did not care who he was. He said Jai Hind and I replied back with

a louder Jai Hind. Tea was as black and as sugarless as the RM drinks it, but I didn't care anymore. Was drunk on Jai Hind.

While walking out of RM's office, but still within its precincts, I was accosted by monkeys. Grey, brown and orange langurs who were convinced that they ruled these lands before Lutyens drafted and plotted acres and edifices. The monkeys were bold enough to sit on cannons and scrapped with olive green uniform wearing jawans who have faced hard artillery at borders but were fighting these devils with empty Bisleri bottles. My escort told me that these monkeys were a legacy of the Brits who still did not want to leave the glorious Raj. But the security guard who escorted us to the safety of our car was convinced that the monkeys were Congressmen who did not want to leave the South Block.

Fortunately, Delhi is opening up to seculars. If you're not into Islam or Hinduism or cricket, you may be able to fight monkeys via video games peddled in Chandni Chowk.

Jai Hind! ◦

Bankim Biswas

Bankim Biswas has verbal diarrhoea dishing out his opinions on almost anything and everything under the sun. Most of it is a lot of bunkum and wishwash or should it be bunkum and dishwash?



Tejucation

TEJAS SHYAM

In my short (and still continuing) career span as a teacher to students in the Science stream in Grade Eleven and Grade Twelve, I've already had the opportunity of being privy to many intriguing discussions with a lot of parents. "My child is in Grade Eight. He is very bright. Please coach him for JEE Advanced from now so that he can be a topper" and "Sir, I want my son to be an IITian because it was my unfulfilled dream to be one" are some of the more common, yet interesting statements that I have heard.

In a country that, many vociferously seem to suggest, is regarded as an intellectual powerhouse of the world, this obsession with becoming ace exam-takers is indeed baffling. While the zeal of parents in giving their children the best possible education is understandable, what stumps me completely is their sheer desire to create super-kids. It seems like there has been a paradigm shift in the general perception of education. From a being a learning-oriented and skill-building process to being a tool for winning academic accolades— it seems as if education has evolved simply into a weapon of mass instruction!

Being a teacher, nothing can be more discomforting than seeing a bunch of youngsters mindlessly and forcibly putting themselves through a grind merely to justify the vague notions of intelligence that the society seems to have of them. And while, admittedly, I have come across the odd kid who is himself or her-

From a being a learning-oriented and skill-building process to being a tool for winning academic accolades – it seems as if education has evolved simply into a weapon of mass instruction!



self extremely motivated to excel in examinations, what worries me is the obsession with marks and results.

The way I see it, we're creating training centres for toppers, not thinkers. Our focus in education is becoming competition, not competence. We're worrying about grades, not intellectual growth. Consequently, there has been an increasing reliance on rote-learning. And a lot of the stakeholders in the education process— the parents, the teachers and the students themselves— don't seem to mind it! In fact, beating the competition has become such an important end in itself that I've heard a lot of kids say, "Sir, is it okay if we study only from this textbook, because all questions are chosen only from here."

The teacher today has been relegated to the role of a service-provider who must ensure results. Many parents come up to me and tell me, "We are paying this institute so that our kids get good grades. Kindly make sure he does well." Well, if only teachers had a magic



wand to make their students ace the exams, life would be bliss! The trend today is worrisome, to say the least. The road we're taking leads to only one destination— intellectual stagnation.

So what do we do about this problem? Will it help if we ban coaching centres? What if we change the JEE pattern? Is the introduction of MH-CET going to change things? Are a few more IITs going to decrease this mindless race to assert a flawed sense of superiority?

Frankly, I don't think any of these measures are a long-term solution to the problem. These are, at best, symptomatic treatments. The first and foremost change that I perceive as a requirement is a change of mind-set. We need to stop viewing marks, accolades and institutional admissions as ends in themselves and start engendering a spirit of curiosity and cogitation in the minds of our children. If we are able to infuse kids with interest in learning a subject rather than making him or her prepare solely for examinations just because he or she can, that will be our first step towards solving the bigger problem.

Also, talking of changing mind-sets, we need a resource pool of teachers who are both knowledgeable and passionate about creating change, while being open to adapting various teaching methodologies as required by the student. As long as we have teachers who make it their business to only push for results by endorsing rote-learning and who do not focus on developing a child's abilities, the vicious cycle of result-driven education doesn't seem likely to end. Moreover, inflexibility of teachers with regards to adapting to a child's educational needs is becoming another problematic area. The insistence of some teachers in delivering a pre-decided chunk of knowledge in a certain way, without bothering about whether the students are actually able to cope and assimilate the gyaan, is appalling. We need teachers who take the effort of making a child understand and apply concepts.

Change, they say, is the only constant. As a society, it is time for us to embrace this change in the education domain. Not for ourselves, but for the future generations. Let us not just remain a nation of test-takers. ◦



Tejas Shyam

DUAL DEGREE, ME&MS,
C'12

A teacher by choice and a poet by chance, Tejas is a passionate 'Edupreneur'

who seeks to make learning an application-oriented process and inspire students to excel. His inquisitive mind seldom accepts anything without proof- English included! He has, in the past, worked as a freelance journalist with the Times Group.

TOWARDS SUSTAINABLE INDIA

Pressing Issues and Solutions for Sustainable and Inclusive Development

MANOJ KARMAKAR



The Issues

India is a resource rich country. As per Wikipedia: “the total cultivable area in India is 1,269,219 km² (56.78% of total land area). India has a total water surface area of 360,400 km² and receives an average annual rainfall of 1,100 mm. Irrigation accounts for 92% of the water utilisation, and comprised 380 km² in 1974, and is expected to rise to 1,050 km² by 2025, with the balance accounted for by industrial and domestic consumers. India’s inland water resources comprising rivers, canals, ponds and lakes and marine resources comprising the east and west coasts of the Indian ocean and other gulfs and bays provide employment to nearly 6 million people in the fisheries sector. In 2008, India had the world’s third largest fishing industry.

India produces 4 Fuel minerals, 11 metallic, 52 Non-metallic and 22 minor minerals, totally 89 minerals.(2) India’s major mineral resources include Coal (4th largest reserves

in the world), Iron ore, Manganese ore (7th largest reserve in the world as in 2013, Mica, Bauxite (5th largest reserve in the world as in 2013), Chromite, Natural gas, Diamonds, Limestone and Thorium (world’s largest along Tamil Nadu’s shores). India’s oil reserves, found in Bombay High off the coast of Maharashtra, Gujarat, Rajasthan and in eastern Assam meet 25% of the country’s demand.”(2)

It would be abundantly clear from the foregoing how resource rich our country is.

Over the last two decades, India has implemented wide-ranging reforms that opened up the economy, dismantled the old licensing system and introduced competition into a number of sectors that had previously been dominated by Public Sector Monopolies. Supported by further reforms, convergence accelerated in the 2000s and growth averaged over 8 % a year which is one of the strongest

performances in the World(1). Although India is resource rich, and in the post reform period the economy has shown excellent growth, paradoxically, amidst such progress, there are many disturbing facts.

With rapid industrialisation, there has been significant deterioration of the environment. Central Pollution Control Board (CPCB) undertook critical assessment of 88 industrial clusters of the country and declared 47 clusters as critically polluted. The ambient air quality in many of the Indian cities is extremely worrisome.

As per UN estimate of 2010, about 30% Indians live below India's poverty line; as per UNICEF, one in three malnourished children worldwide is found in India; about 25% population of the country is still illiterate; about 97 million people do not have access to safe drinking water; about 800 million do not have access to sanitation services; infant mortality rate is 5%; diarrhea alone causes about 1600 deaths per day to name just a few. (3) One look at these facts makes one wonder what exactly is progress?

India has huge talent pool comprising of technocrats, scientists, engineers, doctors, economists, intellectuals, and also an enviable natural resource base. There is no real dearth of technology or knowledge and there are many Government programs to alleviate the issues mentioned above. There are a large number of corporates and philanthropic foundations which are more than willing to fund any such developmental program. In spite of such a conducive environment, ironically, we are unable to solve some very fundamental issues. Some of the reasons might be the rampant corruption, shifting political focus, poor implementation and execution, scattered efforts unable to make an impact, poor governance, and so on. In any case, the focus of the article is not to dwell on the issues and reasons for the issues but rather on finding solutions.

The New Companies Act

The New Companies Act came into force in 2013 and an estimated 1800 companies having either net worth of Rs. 500 Cr or more, OR turnover over Rs.1000 Cr OR Net profit over Rs. 5.0 Cr and have to spend a minimum of 2% of their Net Profit on Corporate Social Responsibility (CSR). The Act prescribes that CSR activities be focused on Environment, Health, Education and Livelihood in one way or the other. It is estimated that about Rs.8700

Over the last two decades, India has implemented wide-ranging reforms that opened up the economy, dismantled the old licensing system and introduced competition into a number of sectors that had previously been dominated by Public Sector Monopolies.



Cr per annum will be CSR spend just under the purview of this Act.(4)

The target CSR areas prescribed in the new Act are very closely linked with the issues our country is facing today. By the very definition of sustainability, they closely relate to Sustainable India and this synergy needs to be further intensified to take it to its logical conclusions.

Agreed, that the corporates covered under the new companies bill will identify their CSR objectives and work on the same; however it will be governed at least to some extent by the business interests of the company. No doubt that this will create positive local impacts but if the whole or large chunk of funds was diverted to create a corpus, it can be then judiciously spent on the priority areas of the country. Such corpus will provide a substantial financial resource. If some small incentives are provided, many other corporates/individuals,

which are not under the purview of the Companies Act may also contribute and further enhance this corpus. Instead of a localised scattered impact there is a need of a huge national level effort.

The Possible Solution

As can be seen from the foregoing discussion, it appears that the new Companies Act will boost CSR activities which are very pertinent to Sustainable India. What per-

India has huge talent pool comprising of technocrats, scientists, engineers, doctors, economists, intellectuals, and also an enviable natural resource base.



haps is missing is a structured and integrated approach that would ensure that the purpose is served to its fullest and issues which are handled are of national interest and importance.

It might be a good idea to form a central autonomous nodal agency which will drive the initiative of Sustainable India. A model of such an agency is proposed below

The Proposed Sustainable India Model

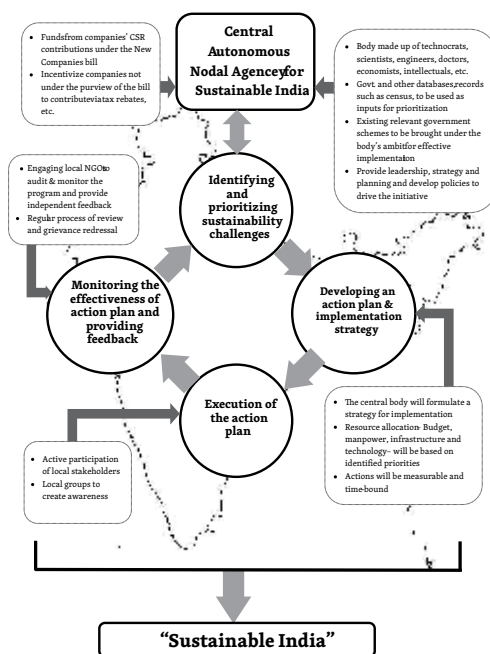
The author feels that there is a pressing need to form a National level Autonomous / Government /Semi-Government nodal agency with a mandate of “Sustainable India” which is depicted in Figure-1.

The Central Autonomous Nodal Agency will comprise of various domain experts who will put their heads together and crate a Sustainability policy for the country. Such a special task force may analyse all the relevant government and other databases and in collaboration with NGOs and other relevant stakeholders, formulate a comprehensive programme to address burning issues in a stepwise manner, assign them due priorities,

and crystallise an action plan.

An independent agency comprising of NGOs and other special interest groups etc. can audit and monitor the progress of implementation of the action plans. The implementation shall also involve the local population to provide the workforce and also to create awareness among the communities about the importance of such programs.

FIGURE 1: Sustainable India Model



Thus the proposed model will form synergies amongst the corporates covered under the Companies Act, NGOs, ongoing Government projects, Technocrats, Doctors, Engineers, Economists, and more importantly the local communities, to identify root causes for the problems and formulate implementation strategies to bring about Sustainable and Inclusive development. In the proposed model, the resource pooling and strategising shall be centralised and execution and implementation shall be decentralised.

Conclusion

Post economic reforms, there has been a significant surge in the Indian economy over the last two decades. Paradoxically in spite of this rapid growth, some fundamental issues pertaining to Health, Education, Environment and Livelihood are in desperate need of solutions. There is a synergy between CSR activities and fund allocations for CSR in the new Companies Act and the sustainability goals for the country. There is perhaps a need to integrate all the available human, monetary and technological resources under a central nodal agency, which can plan, develop and execute an action plan in a time-bound manner to ensure sustainable and inclusive development in India. ◦

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Manoj Karmarkar

M.TECH, EESE, CESE, '92, H2

Manoj has 23 years of experience in the Pharma, Agrochemicals and Chemical industry. For first 14 years, he worked mostly in the field of Environment. From 2006 onwards he started working in the field of safety and has been employed with Wockhardt, Reliance Pharma, PI Industries Ltd. Manoj also participated in India's first lake bioremediation project in 1998 –“Bioremediation of Kacharali lake, Thane. Outside work, he is passionate about books, music, tennis and cricket. He also loves Bollywood and Hollywood music.

RAAS

RELIGION AS A SERVICE

VERSION: 7.5.6 ANIL GANDHI

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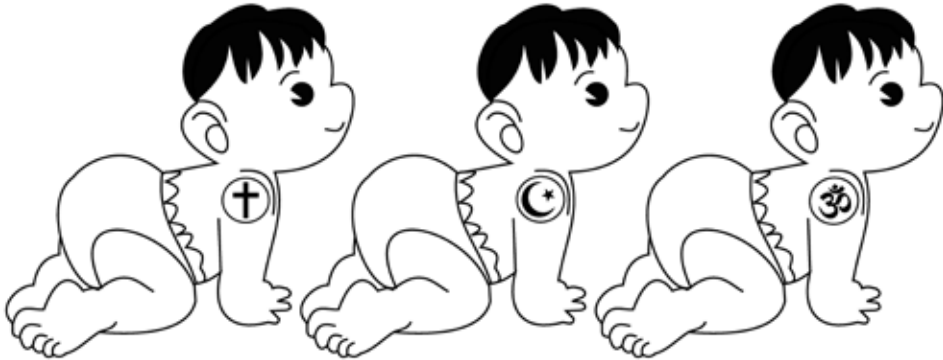
don't have to – this way you can be dressed in perfectly greenwashed clothing while we do all the dirtying for you.

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Now you might be wondering – “this must cost a fortune – with all the redundancy and failovers and state of the art security and so on”. Again, fear not, you can sign up for free, we only ask that you deposit your soul with us. We make it easy for you. If you order

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today, we will throw in another subscription for your paramour for free. For a whole year, no less. Now both of you can comply with heavenly laws while eating anything you want, even gluten and yes, even an apple.

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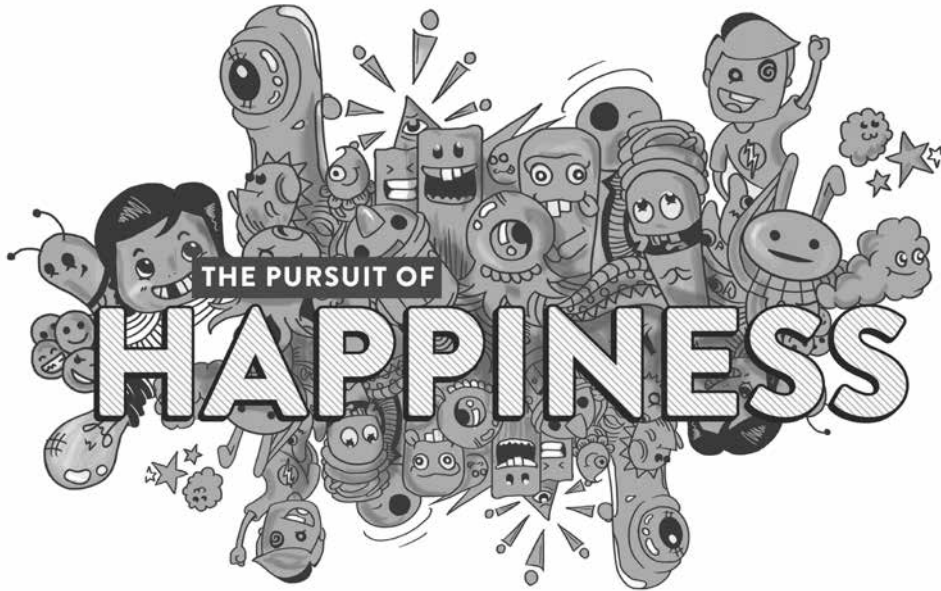
On any day this would be a fantastic deal in itself already. But we love you, ladies and gentlemen. So folks, if the deal wasn't yet attractive enough for you, try this one on for size – If you get a five year subscription, you get to create your own religion so you can feel holier than the rock in our backyard one and that other one over there in your neighbor's backyard too. Just like our basic plan, we will not consume the forbidden fruit (so you can) and not have coitus with your hot neighbor (so you can), but we will also trick evangelize other DoItMyWay subscribers to join us in following your religion. Now there's a deal you can't refuse, even in Gomorrah. ●



Anil Gandhi

B.TECH. '84 EE, H-7

Dr. Anil Gandhi is a data scientist and an entrepreneur. His current interests include using data to predict the future. In his spare time he data mines to improve performance metrics in semiconductor and other manufacturing. You can admire his work by e-mailing to him at mindrate@gmail.com.



Panelists: Anamika Agrawal, Deepak Dilipkumar, Devang Thakkar, Galigi Prashanth, Gulam Sarwar, Manu Rathi, Niranjn Thakurdesai, Prasad Gandole, Rucha Walawalkar, Shreerang Javadekar, Shreya Gupta, Sohinee Ganguly, Vishvesh Vsk

With endsems already upon the students and the study rooms occupied to their fullest, everyone has been gripped by “The Semester Dream” - the one tiny hope in the back of their minds that somehow, despite not having studied as much as they would have liked, their CPI would see a spike this semester. This is the time of the year when the canteen owners witness business at its peak, courtesy stress-eating and an elevated caffeine intake, and sleep cycles go for a toss as there is a scramble to catch up with the seemingly unending endsem syllabus. Even though stress levels reach a spike during this period, a semester full of ‘headlines and deadlines’ ensures that the in-semester stress is no less. Constantly under pressure from parents, peers and especially themselves to fare better than the best, it isn’t always a smooth ride for the students at IIT Bombay.

Measuring happiness or stress levels is at least as difficult as catching rare and elusive butterflies. But with trustable precedents to look up to, we correlated a few factors which are crucial during the students’ stay here with their perception of contentment. Different individuals have different natural responses to stress-inducing stimuli they are subjected. As a result, it is inevitable that happiness and stress levels fluctuate across the student demographic. Insight set out to investigate this through a first-ever psychological survey on campus conducted in classrooms across three years for UGs (excluding fourth and fifth years) last year. Keep on reading to know the findings of this study.

The survey was adapted from the Oxford Happiness Questionnaire¹ to appropriately gauge the happiness and stress levels here. To do this, we’ve focused primarily on the various factors that make the average IITian happy and those that lead to a receding hairline and a multitude of stress lines. With cases of self-harm and suicides cropping up at alarming frequencies across different IITs

1 <http://happiness-survey.com/survey/>

and the appointment of student counsellors to combat this predicament, it was imperative to know why the joy of getting into one's dream institution wears off even before it sets in.

How do Stress and Happiness Vary?

A year by year analysis shows that happiness levels on campus are highly accredited to happenings that are relevant to the general student population. It was observed that happiness levels dropped during the transition from the freshmen to the sophomore year but showed a steady rise subsequently.

One of the primary reasons for the drop in happiness levels is believed to be repentance towards academic negligence during the freshmen year. A major chunk of time in the freshman year is spent in exploring different activities resulting in laxity towards academics. The transition to the senior hostels later on means further sloppiness while adjusting to entirely new surroundings. Sophomore students alleged that difficulty in juggling between extra-curricular activities and academics led to increasing stress and decreasing happiness levels. Pressure of securing internships and third year PoRs was attributed as a possible facet to the increasing stress levels.

On probing a few junior year students, it was observed that happiness levels increased during the third year chiefly due to the internship period. Despite it being a stressful period in the early stages, securing internships translated to relief from parental and peer pressure for them. It was perceived that by this time, students learn how to cope with the increasing academic load and extra-curricular activities. Most of the students narrow down their interests to a few, thus being able to manage them efficiently.

The survey imputes academic pressure as the cardinal reason for changes in happiness and stress levels. When happiness levels were compared to academic performance, it was seen that as CPI fell with passing semesters,

happiness levels took a spiky fall while stress levels increased. Shattering the notion that students with lower CPI would naturally be unhappier than those with a decent enough CPI, it was seen that students with 8+ CPI were equally stressed out and unhappy when compared to those in the range of 5-7; the reason for it being that the former category students also felt the heat to maintain their golden numbers while attempting to outperform others.

A drop in attendance was observed with the passing years. Lack of interest in the subject and increasing dependence on self-study can be possible reasons behind students attending fewer lectures.

Coping Mechanisms

With the amount of stress that affects the average IITian, it is necessary to inquire into how the student tries to alleviate it. To state briefly, coping mechanisms can be explained simply as an amalgamation of cognitive and behavioural efforts to reduce stress. Cognition, as a skill set, refers to a human's ability to process thoughts that help him in interpretation and analysis of situations. Besides measuring the levels of happiness of the students, the study also tries to estimate which are the most frequently-used coping mechanisms that students – consciously or unconsciously – apply in order to relieve themselves of the stress they face. Coping mechanisms, besides being positive (reformative) or negative (maladaptive), can be basically divided into two categories – reactive and proactive coping. Reactive coping deals with the response to a particular stress while proactive coping deals with avoidance of the stressor. Since proactive mechanisms tend to be very subjective, in this survey, we look at the most common reactive mechanisms and how much they affect stress levels in students, thereby identifying the mechanisms that are significant predictors of stress (at 0.1 significance, 90% confidence interval).

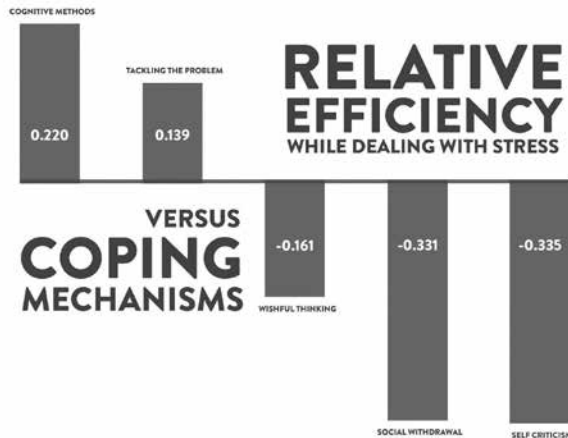
HAPPINESS INDEX

FIRST YEAR
4.02

SECOND YEAR
3.92

THIRD YEAR
3.94

THE INDEX IS MEASURED ON A SCALE OF 6, WITH 0 BEING VERY UNHAPPY, 4 BEING SATISFIED AND 6 BEING TOO HAPPY



One of the major negative mechanisms that has proved to be a crucial factor behind stress is social withdrawal. Students who clear the JEE are usually among the brightest in their respective schools and junior colleges. However, with relative grading in place, it is natural that some students fall behind others. This may result in students feeling ashamed of themselves and trying to avoid company. Social isolation has been found to exacerbate a person's feelings of low self-worth, shame and depression. According to the study, this mechanism – intended to reduce stresses – ends up leading to higher stress levels given the positive correlation between social withdrawal and stress levels.

Another major finding of this study was that among the students who were able to cope with the stress, most of them had excellent cognitive abilities. Cognitive restructuring is a psychotherapeutic process wherein the subject tries to identify what mechanisms wouldn't be beneficial to him/her. Cognitive

skills, in this case, encompass a varied set of responses to a stress-inducing element wherein the subject tries to change his or her outlook towards the situation.

Self-criticism has been found prevalent in people who come from extremely competitive backgrounds and IITians would definitely end up in that list. Self-criticism has always been an integral factor behind the success of students in their formative years, because the awareness of one's own shortcomings is crucial for efforts towards self-improvement. However, self-criticism can only do so much to help one improve; in this study, it was seen that self-criticism was the most significant factor that leads to stress. Students with higher stress levels replied with multifarious responses, the most prominent of them being "I told myself that if I wasn't so careless, things like this wouldn't happen". It is of utmost necessity that students try to realise where their limits lie and how far they can stretch themselves just by pushing harder. Furthermore, accord-

ing a Harvard research study, chronic exposure to situations that involve self-criticism may lead to feelings of despondency, hopelessness, and pessimism, thereby elevating risk for suicide attempts.²

The happiness levels obtained from this survey lie between 3.92 and 4.02 with the average happiness score being just above 4, indicating that the average IITB undergrad is moderately happy and satisfied. The extremely competitive atmosphere that these premier institutes entail often leads students to believe that one can only be happy when he/she is better than the rest. Students at the either extremes of the CPI spectrum are found to be the most stressed and if we dig deeper, this result isn't surprising at all. Constantly living up to societal and their own expectations, the high ranking students often have to make social and personal sacrifices in order to maintain their performance levels while on the other hand, there are students who have never faced such demanding and competitive atmosphere, and are not able to keep up with the rat race. Students with better cognitive skills are usually better at handling stress while the ones who face withdrawal symptoms are hit the worst by stress.

We would like to give a special vote of thanks to Sohinee Ganguly (Research Scholar, HSS Department) and Prof. Pooja Purang for their invaluable help in conducting the extensive study. ◉

insight

the third eye

Insight Team

This article was contributed by the Insight team. The article was first published in issue no 18.2 of the magazine. Insight is the official student media body of the IIT Bombay. Insight is currently the only active official media body in the institute run voluntarily by students.

² http://www.academia.edu/4776883/Suicide_Attempters_Show_a_Maladaptive_Response_to_Criticism



AUNT EMILY'S GARDEN ©

ELIZABETH KOTTAREM

Emily Coelho stood outside the Fatima church in Hadapsar, in suburban Poona, where a small East Indian community congregated every Sunday for morning mass. She was dressed in her second best, printed silk dress, which went a little below her knees. It had a narrow strip of pink lace at the collar, which matched the pale pink and grey flowers, on the off white silk dress. The dress, with its gathered skirt, hung loosely over her as she had gone thin since the last year, after a long bout of flu. She wore open toed sandals, with sensible low heels and in her hand was her small black handbag of artificial leather, which held her prayer book and black rosary in it.

The whitewashed church embellished with twin curvy spires that rose into the sky, had a massive front door and broad steps on which parishioners stood talking.

'Hi Aunt Emily!' hailed a neighbour. Emily turned around and peered to see who it was. Joachim from the ground floor flat next to hers smiled at her and waved from the far end, near Our Lady's grotto.

'Joachim! I want you to come for my barbecue today at seven in the evening,' Emily said warmly, her eyes twinkling, 'You weren't at home when I telephoned on Friday.' Joachim was always wanted at parties. He was funny and good at mimicking people – pon-

derous Father William who had a pot belly that wobbled, or the headmaster at the local English medium school Mr. Raunak Pandurang, who always talked in a British accent, which occasionally slipped to say 'test' instead of 'taste' and 'jeero' instead of 'zero'. Joachim promised to come, provided Aunt Emily made her famous Sorpotel, in addition to the pig that would be roasted at the barbecue. Emily nodded her head, 'Of course,' she said and waved at a few more of her friends before she said, 'Well, I must be going' and turned to the cemetery for her customary visit to Sophie's grave.

The tombs were spread out over grassy knolls in orderly rows. Most of them were old, with marble slabs, but there were a few wooden crosses to mark the newer graves, over mounds of earth. Some were inscribed with messages about the good nature of those who had passed on and others just bore terse dates that conveyed the births and deaths of those interred in the graves. Emily walked up to Sophie's grave. Her little Sophie who had died of a fever twenty years ago... The grief was as fresh as on the day that she had lost her youngest child. The small marble edifice had the words "*Sophie Coelho. Born on 14-10-74. Called to the Lord on 1-7-78. In Heaven we will meet our Darling Angel.*" Emily bent her head in prayer for a few minutes and then

moved on. A soft breeze played around as she walked through the grass and a dandelion flew in the air. Emily remembered playing in the park with Sophie, chasing dandelions. Sophie had loved dandelions. Emily almost heard her gurgling with childish delight. She seemed to be saying, 'Don't worry ma, I'm still around.' Emily deftly caught the dandelion for Sophie. 'Lucky to catch a dandelion, Baby,' she murmured to Sophie. Just then Orchid D'Cruz came up and loped her arm into Emily's. 'Let's go home together,' she said, 'I'll help you with the cooking.'

They walked to the nearby Sarowar Apartments where they both lived. Emily had three flats on the ground floor. James had bought them after he had returned from the Gulf fifteen years earlier. There would be one for each of their three children, he had said. But the children grew up and went away, in the manner of all children.

James merged the three flats into a single apartment. The three ground floor flats had entitled them to the ownership of the open area around. Emily had green fingers. The open space was soon transformed into a lovely garden with a hedge of honey suckle and a handkerchief sized lawn that shimmered like an emerald. They planted two trees – a sapling of guava and another of mango, at each corner, at the back of the garden, so that small boys would not steal the fruit from near the front gate. A spreading *champa* grew near their bed room window and the fragrance of its small mauve, flowers filled the air. James watered the lawn and every season Emily planted beds of flowering plants and shrubs. There were flocks, gerberas and daisies. Along the wall, she planted lovely dahlias and bright red gladioli. She remembered the time when her dahlias had won prizes for two consecutive years at the local flower show held by the Rotary Club. Emily entered her garden gate and Orchid left her. 'I'll come in half an hour,' Orchid called over her shoulder.

The garden was no longer orderly now. It was full of wild growth. A large, yellow lizard with beady eyes stared at Emily from its perch on the guava tree. Emily shooed away the lizard. Only the other day, she had strained the milk from the saucepan to find a dead lizard in it. They had just escaped being poisoned. She had chided the servant Gangoobai for being so careless.

'You did not even bother to cover the milk. We'll die one of these days of lizard poisoning and our children won't even know that we are dead,' she scolded.

Emily walked into the kitchen meditatively. She planned her menu for the evening. The meat had been bought and the spices had been ground fresh by Gangoobai and kept in the airtight plastic container on the kitchen shelf. She had bought fresh cucumber, tomatoes and spring onions on her visit to the bazaar the previous evening. The flour had been already kneaded into firm dough for the Parathas. Gangoobai would come in the evening to roll out the Parathas. Orchid would also help. She must ask James to get the ice cream, she thought.

James lay in the easy chair in the garden in the sun dozing, his mouth slack and open. 'James – James,' she called softly. 'Get up,' a note of reproach creeping into her voice. 'No Sunday mass and sleeping so late in the morning.' James rubbed his eyes guiltily.

'Nat sleepin,' he said 'Just dozed off, the sun was so warm.' He moved in languidly. 'Wot yu cooking?' he asked.

'Your fav,' she answered, 'sorpotel and roast pig, biryani and parathas. Just call at the corner store for ice cream.'

James shuffled off to do her bidding. He was no longer as sprightly as he was when the children were around. They had fewer parties now. Ten years ago the house rang with laughter, as the children teased each other and threw the ball through the basketball net on the post that stood at one end of the garden.

The post was now rickety, the wood rotting at the base. The dark brown piano in the sitting room stood silent, a coat of dust on the top, with the sheets of music untouched for so many years. They had spent so many happy hours singing songs of an evening –

*My Bonnie lies over the o-shun,
My Bonnie lies oh-ver the see,
My Bonnie lies over the o-shun,
My Bonnie lies oh-ver the see,
Bring back, O bring back-
O bring back my Bonnie to meee!
Last night as I lay on my pil-low,
Last night as I lay on my bed,
Last night as I lay on my pil-ou,
I dreamt that - my Bonnie was dead.
Bring back - Obring back –
O Bring back my Bonnie to me – to me!
O Bring back my Bonnie to mee...*

The house was silent now. They missed the children and the happy days gone by. But today there was an air of merriment. It was Stephen's birthday and they celebrated it just the same as if he were right there with them and not miles away in Ottawa. Stephen was working on his PhD on 'Nutritional Deficiency and Delayed Cognitive Skills in Korku children of Melghat.' He had met a white girl at a discotheque and married her in the Lutheran church that he attended. Emily's eyes smarted with tears at the memory of the marriage of her first born. No invitation card in white and gold, no dinner reception. She had so looked forward to a grand wedding at the Church hall, with her best grape wine and Father Fio's witty toast to the bride and groom. Emily wiped her tears with her kerchief and looked out of the sitting room window. She saw James, his head bobbing above the garden hedge, walking along the road. She watched him till she could no longer see him.

James reached the cold storage with its lurid picture of roasted chicken and a live fowl, on the sign board at the front of the shop.

'Give me two party packs of ice cream,' he told the store boy, Chotu.

'What flavour Uncle?' asked Chotu.

'Chocolate,' said James. As he stood at the store, James suddenly felt sick, a dizzy feeling over took him and he gripped the service table. Perspiration beaded his brow.

'Uncle! Uncle! Are you ill?' Chotu called out in alarm. He helped James to the back of the shop and made him sit on a bench there and got him a glass of water. He called up Emily. She came in a taxi, dressed just as she was when she got the phone call from the shop -- in her faded home clothes. James smiled wanly when he saw her.

'Just feeling a little queer, old girl,' he whispered.

'Now James! You're going to be right as rain! You can't get sick just now,' she scolded, her face looking strong and dependable. James lay gratefully with his head on her shoulder in the taxi as they took him to the Sassoon Hospital. But on the way James slumped forward and Emily caught him with a stifled scream. His head lay on her shoulders till they got to the hospital. She was too stunned to cry when the doctors came out of the ICU and told her that they had been too late. She sat silent and still, clutching her rosary. James was dead, she told herself. How would she live without James? Orchid came to the hospital and took her home.

The neighbours and relatives came and sat in Emily's tidy front room. They lit a candle at the altar with the picture of the Sacred Heart of Jesus and hastily cleared the room of furniture. A long, wooden table was placed in the centre of the room, with the brown wooden coffin in which James lay peacefully. Two lit candles were kept at the head of the corpse. They sat praying, saying the rosary, the prayers for the Dead – *Eternal Rest Grant Unto Him O Lord and Let Thy Perpetual Light Shine Upon Him...* They sang hymns of grief and hope, *Lord I'm coming Home* and

Lead Kindly Light.

Orchid phoned the boys at Ottawa and Philadelphia and Rose at New Jersey. The children came home -- first Rose and then Stephen and Cajetin. They sat by their mother, holding her frail hands, as Emily lay in bed, dry eyed and numb. She was unable to come to terms to a home without James to be taken care of. Cooking his special Sunday lunch of chicken curry and fried fish. He had liked his evening rotis hot from the tava with the vegetable curry and just two sausages grilled. And bless him -- he never worried her by drinking more than was good for him. He just had a glass of whisky for company at Christmas and Easter...

For a few days the house was filled with the sounds of people moving and talking. Rose took over the kitchen and boiled endless cups of tea for the visitors who streamed in. But after the funeral and the seventh day's memorial mass, the children went back. They said that they could not get more leave of absence from their jobs in America. A father's death entitled you to a week's leave, no more. Americans were workaholics and had no time for their parents. Most of them put their parents in old age homes anyway and didn't even visit them at Christmas. The children urged Emily to accompany them to America. But she demurred. She dreaded the thought of living as a dependant with her children. She preferred the golden sun in Poona. The one time she had visited Rose in New Jersey, her arthritis had got more painful during the long, cold winter.

The garden now went completely to ruin. Weeds grew and there were no flowering plants other than the wild roses and the bougainvillea. The grass in the garden wore a dull, yellow, dry look in the summer months since no one watered the lawn any more. Sometimes Emily pulled up an old wicker chair and sat dozing in the sun, her head shaded by a straw hat that her grand children had bought on a

trip to Goa and left behind. Her eyesight was fading and she no longer read the papers. She sat at times in the evening before the TV hearing the world news about bomb blasts and hijacks and the worsening Arab-Israeli crisis. She was alarmed at the news of a Sikh mistaken for an Iraqi and being attacked by right wing Americans in New York. Her heart beat with anxiety for the safety of her children lest they be mistaken -- with their brown complexions, for Arabs and attacked in the streets. She

The headmaster at the local English medium school Mr. Raunak Pandurang, who always talked in a British accent, which occasionally slipped to say 'test' instead of 'taste' and 'jeero' instead of 'zero'.



wrote letters in a shaky hand to her children every month.

"Dear Stephen," she wrote, "Do take care and lock the door safely at night. See that the children are safe. Hope they are studying well." Rose replied to her letters and sent her a present of two hundred dollars every month. The boys remembered her at Christmas and sent her five hundred dollars each with their greetings. They promised to send her a return ticket provided she was ready to cross the seas and be with them. But she refused to be persuaded.

One night Emily shut the fine mesh front door which kept out the mosquitoes and had her lonely supper of bread and a chicken curry. She said her prayers and retired to bed, switching off the bedroom light. Then she heard a low hissing sound. It emanated from the window which overlooked the garden. The sound unnerved her. There was a soft slithering noise and she prayed to Archangel Michael

who crushed the serpent and St George who destroyed dragons and all kinds of evil. She didn't sleep a wink that night. As the first streaks of the grey dawn gave way to the morning light, she got up in bed and looked around fearfully. At the far end of the room, near her writing desk, coiled on the leg of her chair, was a fat black cobra that looked at her with malevolent, red eyes. She stepped out of the room slowly, softly, in bare feet, backing out of the room, her eye on the serpent.

'Joachim, Orchid,' she called in her high, quavering voice and they came out hurriedly, alarmed at the sense of urgency in her voice. Joachim asked his two sons to come down and they came armed with sticks. The snake had moved away to a dark corner under the bed. When they poked at it with a long broom, it stood up with its hood flared out and darted out angrily at them. They beat it and killed it.

'Unlucky to kill a snake, its mate will come back and seek its revenge,' muttered the watchman Vikram Singh, who had come along to watch the spectacle.

Orchid kept her company for a few nights thereafter. But Emily was tired of her large apartment and her garden. She called an estate agent and asked him to look for a buyer for her home. She bought a small flat, which had fortuitously just fallen vacant -- on the first floor of Sarovar Apartments. Her new home had a single bedroom, a small kitchen and a little sitting room in which to entertain her few visitors.

Emily's three flats were bought by a prosperous Gujarati joint family - old Mr. Kishanchand Mehta and his wife Saritabehn and their three sons, their daughters-in-law and their six grandchildren. The Mehtas owned a large textile shop in the city and the house rang with the merry laughter of the six Gujarati children. Emily called the children upstairs to her flat sometimes and gave them a chocolate each from the chocolates that her children sent her in parcels with visitors who

were going home to India.

The new Gujarati owners employed a young *mali* who planted large dahlias and chrysanthemums in the earth along the wall, with separate beds of daisies, flocks and gerberas. He planted a fresh layer of lawn grass and assiduously watered the lawn every evening. The green grass glistened with drops of water and the smell of wet earth wafted up to Emily every evening, as she stood at the window watching the *mali* at work. She saw the garden bloom once more. It warmed her old bones to think that there was beauty and laughter again in the apartment that she and James had lived in and raised their children. The lonely, empty feeling in her heart was assuaged a little. ◦



Thanksy Francis Thekkekara

PHD, 2012, HSS

Elizabeth Kottrem (the pen name of Thanksy Francis Thekkekara) is presently the State Information Commissioner Maharashtra (Konkan). She retired in 2013 from the Indian Administrative Service as Additional Chief Secretary, Maharashtra. She has 36 years of experience in public administration. She did her Ph.D in microfinance from IIT Bombay. Apart from her venture into fiction, she has written several books and articles on microfinance and gender. She lives in Mumbai, is married and has two daughters. The present story was originally published as a book Mehbub Gulley: Short Stories from India by Partridge and is available for purchase on online stores such as Flipkart and Amazon.



A HANDFUL OF SUMMERS

*Go back down the years and recall if you can
All the warm temperate times; you may find
with surprise
That they're all squeezed in to a headful of
thoughts,
and a handful of summers.*

- Gordon Forbes

Some time quite recently, they brought down the remnants of the old H10. After a short encounter with its faded remains during our silver reunion, it is quite a relief to know the old hostel is no more. This requiem of sorts was hibernating until a chance encounter on social media with someone triumphantly circulating pictures of a rare flower blooming in their garden – whoa, wasn't that the H10 cactus? Innocence and ignorance are such a heady mix; we'd enjoyed its fragrant nocturnal displays without realising it was quite such a rare bird...

June 1983: memories of being transplanted from my southern hometown, and also, of feeling pleasantly at home on the rain-drenched campus. The first morning's shock of waking up in a strange place was leavened by the sight of roses bobbing their heads outside my window. A Shalimaesque luxury – a hostel lawn fringed by rose beds – that

The first morning's shock of waking up in a strange place was leavened by the sight of roses bobbing their heads outside my window.



was best viewed from the ground floor wings customarily allotted to freshers. Whatever I had expected to find in Bombay, and in a hostel, this was definitely not it! One quickly learnt that ground floor rooms also came with other privileges like visiting earthworms that squeezed in under the doors.

If it looks like my IIT/H10 memories are primarily of the flora and fauna, that's a fair reflection of the kind of place it was – an urban jungle with a few buildings thrown in. The main road outside the gates was quiet enough so you could grab an ice cream and quickly cycle to the Guest House lawns to eat it before it melted.

Further afield, we had plenty of opportunity to experience the wide outdoors. Memories of a monsoon hike to Matheran on my very first IIT weekend have triggered a smile every time I had a querulous child in the back seat asking "Are we nearly there?" I had



If it looks like my IIT/H10 memories are primarily of the flora and fauna, that's a fair reflection of the kind of place it was – an urban jungle with a few buildings thrown in.



embarked on that adventure in a similar state of cluelessness...

Hostel was a self-contained and intimate place with its door-lined corridors that frequently appeared in my vacation dreams! Hostel-sickness was a real possibility. It was probably a bit too self-contained in some ways – it took me an alarmingly long two years to discover Vihar Lake or go on a butterfly walk to Koldongri.

The music room-cum-library was a haven for folks who couldn't go home on the weekends. It was well-stocked, with yearly additions chosen by every batch that passed out – a tradition that appears to have died out. Watching Chitrahaar on TV with live (and lively) commentary from the most unexpected sources was another weekend ritual.

Quite unawares, we were likely there at a time when the hostel was at its best, before the Internet took the conviviality out of hostel life, and while it was small enough so you

could possibly get to know every single B.Tech freshie and veteran research scholar; all under the same roof, for a few summers. ◦



Shubha Chatterjee

**B.TECH, ENGG. PHYSICS, '87,
H10**

After IIT and IIM(Cal), Shubha worked as financial analyst with Exim Bank, CRISIL, Ford India and IDFC. Presently a leading contender for world's most annoying parent. Her other interests include reading, writing, travel photography and crosswords.

The Failures of the RTE Act, 2009

NISHA VERNEKAR

In 2014 I was pursuing an internship collecting data on learning outcomes of primary and secondary school students in PMC government schools in Pune. Having always been deeply passionate about learning, it came as a rude shock to me that not only did most students not love to learn, but they were not learning at all. The quality of education in India has been abysmal for a long time, seeing little progress since the 2000s. The PISA (Programme for International Student Assessment) report of 2009 ranked Andhra Pradesh and Himachal Pradesh as 72 and 73 of 74 states and countries across the world, last only to Kyrgyzstan on learning outcomes. (PISA 2009 Results: What Students Know and Can Do, 2009)

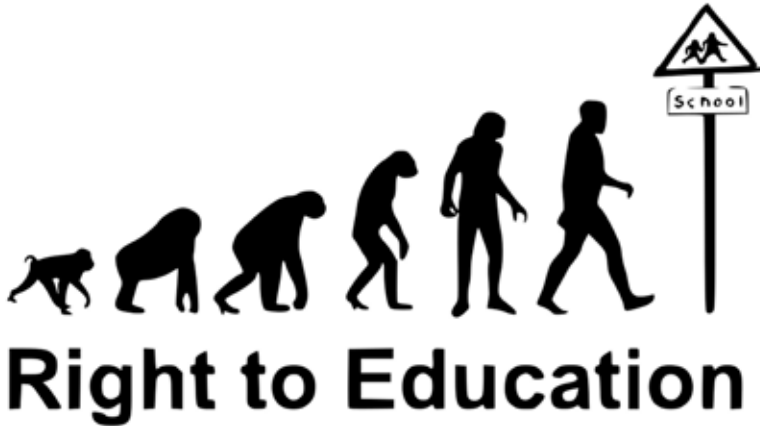
The education crisis has been on the forefront of policy-making agenda since the inception of the Sarva Shiksha Abhiyan Scheme in 2000. The introduction of the Right To Education (RTE) Act, 2009 was the outcome of long-drawn debates of policy makers, representatives of NGOs and various other stakeholders in the education sector. Ultimately the result was a revolutionary legislation that sought to reform the sector and eradicate the underlying issues of the education crisis in the country.

Since then however, learning outcomes in the country have fallen further. Five years since the commencement of the Act, its propensity in improving the status of the education sector

remains ambiguous with several successes but just as many failures.

I embarked on a study to measure the “impact” of the RTE Act, 2009—defined for the purpose of this study as successes and failures of specific provisions of the Act in one, being implemented as per guidelines set and two, addressing the over-arching aims to improve the status of the education sector. I identified four overarching aims of the Act: improving access to inputs/infrastructure, maintaining a favourable pupil-teacher ratio (PTR), reducing inequities through reservation of ‘disadvantaged’ children in private schools, and maintaining teacher quality. Ideally each of these tangible aims should be aligned to the broader, ultimate goal of attaining high learning outcomes in children by improving the quality of education delivered.

The problem here is that the Act was formulated on the premise that increased investment in the education sector would improve the quality of education in the country. In attaining the former, we’ve lost sight of the ultimate goal. Thus, if we compare the “state of education” as per rankings awarded in ASER (Annual Status of Education Reports) published by the Pratham Foundation that assesses learning outcomes and those given by the government’s DISE (District Information System for Education) data that assesses the implementation of provisions of the Act, there will be significant disparity. The fact that one



Right to Education

doesn't translate into the other implies that the premise on which the Act is built is flawed.

Based on secondary data analysis, the study effectively comes to the same conclusion. While the Act has largely been implemented successfully in the country—the goal of universal enrolment rates is not far from being achieved, standards for infrastructure provision have been observed in several states across the country including the provision of infrastructure specific to fostering inclusion in private schooling for children of disadvantaged groups – this has not translated into improved learning outcomes.

Here is why I think the aims of the RTE Act, 2009 are flawed.

Pupil Teacher Ratio

It has been debated that maintenance of a favourable pupil-teacher ratio could benefit the quality of education. The smaller the size of a class, the more attention a teacher can pay to each individual student's requirements.

The Tennessee STAR (Student Teacher Achievement Ratio) is possibly the most established study that supported this idea. Results showed that primary-level students clubbed into classes with a strength of 13-17 students showed higher learning outcomes than students in "regular" classes of 25-30 students. The RTE Act sets the PTR at 30:1

for primary school students and at 40:1 for secondary. This is an important provision from the perspective that in the past and even presently we see schools with nearly 60-100 students to one teacher. The PTR standards set will have little or no impact on the quality of education unless reduced even further. This is not feasible in the Indian scenario for sheer volume and costs associated with increasing an already plentiful workforce.

Infrastructure (and Inputs)

The RTE Act constitutes several provisions pertaining to infrastructure. This study only considers the provision of school buildings, increasing access to schools, and the provision of learning material.

Studies show little correlation between the provision of inputs and infrastructure to the learning outcomes of students, however the nature of the inputs does have some bearing. The parameters of infrastructure, midday meals and provision of non-textbook learning material were proven to indirectly impact learning outcomes by increasing student attendance (Hammer, 2013).

The use of learning materials in teaching could have a positive impact for students' learning outcomes as they make the learning process more interactive, and allow for a diversion from the one-size-fits-all lacuna of

the Indian education system, catering more, perhaps, to the visual and tactile learners. However this needs to be accompanied by trained teachers who can utilise the material provided.

Inclusiveness through Reservation

In a vicious cycle where inequality begets inequality, the education sector in the country constitutes private education institutes that offer international boards that cater to the elite of society. On the other hand, public schools show deplorable learning outcomes year after year. Bridging the gap between the two, albeit poorly, with several rungs missing, is a plethora of low-cost private schools with marginally better learning outcomes than public schools. The net effect is that overall learning outcomes in private schools are higher than that of children enrolled in government schools.

With respect to disparities in learning outcomes, studies show that the higher learning outcomes in private schools could be attributed to the socio-economic background of the child. Children coming from wealthier homes with educated parents tend to show higher skill development and learning outcomes than those coming from deprived backgrounds (WDR, 2015).

The Act attempts to close this gap through its reservation policy whereby 25% seats in private, un-aided schools are reserved for children of “weaker sections” or “disadvantaged groups”. The hope is that investing in early education skill development could possibly overcome the impact of socio-economic differences between children.

Studies, however, clearly point to the failure of RTE in preventing discrimination of students enrolled under provision of the Act, which could have an immense negative impact on the learning outcomes of such students.

The practice of grouping students by age rather than ability could become counter-productive in improving learning outcomes.

Remedial teaching is an important method to counteract this problem. However, in the absence of special and remedial teachers, regular teachers find it difficult to pay additional attention to these students if not at the cost of the learning of the rest of the students.

Finally the importance of training regular teachers needs to be stressed not just in the point of view of dealing with students with diagnosed disabilities, but also in identifying students with learning disabilities within a

Teachers, as is true with any profession, must be adequately motivated in order to ensure high efficiency in their work, and consequently improved learning outcomes.



classroom setting. Learning disabilities that go unrecognised can gravely hamper the potential learning capabilities of the child.

The idea of a reservation policy by way of which we, as a country, can extract the benefits of housing private institutions that deliver a high quality of education is commendable. However, the Act leaves a lot to chance, and with little accountability we can see why there are so many negatives stemming from what should be a positive push toward increased learning outcomes.

Teacher Motivation

One of the most important stakeholders in improving learning outcomes is the teacher workforce of the country. The three countries ranked at the top three levels in the PISA assessments since 2000 - Finland, North Korea and Japan - differ in their approaches to teaching, yet they impress with their emphasis on teacher education and qualification standards of teachers. So too does the RTE Act recognise the imperative of ensuring a high quality

EDUCATION IS THE KINDLING OF A FLAME, NOT THE FILLING OF A VESSEL. -SOCRATES

teaching staff by setting standards for qualifications of teachers.

The question remains however, whether these standards are good enough. Compare teacher qualification standards between Finland and India in a snapshot. In India an average of 16 years seems sufficient to teach primary or secondary school children, where as in Finland a minimum of 19 years is required. Teachers in Finland are also required to take specialised courses in their subject of choice which is not a requirement in India. In a way India can be said to be caught in a vicious cycle of low quality education. The limitations of the Indian education system limit the potential weapon of the country – teachers - from subjugating those limits.

Finland further emphasises special needs teacher training programs– the number of years of schooling for a teacher under this category can go up to 24 years, equivalent to the number of years of schooling that a Doctor or Engineer with a specialisation degree would do in India. This is interesting to note as the professions of doctors and engineers have been greatly revered in India for decades now, albeit with less ferocity than before. Studies suggest that being employed as a teacher is one of the most highly sought after professions in Finland. Many write this off as a cultural anomaly. However field research suggests that this is replicable with close attention to policies employed. This brings us to what I believe is a crucial issue with the RTE Act, 2009.

Teachers, as is true with any profession, must be adequately motivated in order to

ensure high efficiency in their work, and consequently improved learning outcomes. This is one aspect that the Act fails to address as indicated by results of studies that show high levels of inactiveness of teachers, irregularity of classes held, and high teacher absenteeism. The application of theories of motivation and human resource management could prove fruitful here.

Herzberg's theory of motivation claims that two kinds of factors (extrinsic/hygiene and intrinsic factors) motivate us at our workplace. Provision of extrinsic factors does not ensure motivated employees, however its absence could very well demotivate them. The Act in its current form achieves a similar result. It provides the basic infrastructure and inputs required to prevent the demotivation of teachers, but does little to motivate them. A study corroborating this idea pointed out that while teacher unions have increased pay scales, job security and other benefits, it has not led to any real improvement in learning outcomes (Walton, 2010). Intrinsic factors that might motivate teachers include the scope for a promotion, growth, and a sense of achievement which would translate into learning outcomes when associated with increased responsibility given to teachers.

On the surface it might seem like the Act is giving teachers responsibility over learning outcomes. However, due to provisions such as the 'no detention policy' and the CCE (Comprehensive and Continuous Evaluation), there is a paradox of responsibility in the Act that limits the duties of teachers to maintaining deadlines and punctuality more than actual teaching. Studies quoted teachers reporting that they need not expend effort into teaching if students will automatically be passed to the next grade in any case (Ojha, 2013).

Other attributional theories of motivation and behaviour such as the concept of self-efficacy of a teacher and its impact of student learning outcome could be applied to positive-

ly motivate teachers to expend greater effort.

Student Motivation

The RTE Act does expressly mention child-friendly and child-centred teaching, but the matter is not delved into further to ascertain how this shall be achieved. In a sense, it does not consider the most important stakeholders in a students' learning— the child him/herself.

Incorporating attribution theories of

The RTE Act does expressly mention child-friendly and child-centred teaching, but the matter is not delved into further to ascertain how this shall be achieved. In a sense, it does not consider the most important stakeholders in a students' learning – the child him/herself.✿

motivation, the study suggests how cognitive concepts can be applied within the ambit of the act to motivate students toward achieving high learning outcomes.

For example, school-based research indicates that students expecting to do well tend to earn higher marks than students having comparable ability but expecting failure. The manipulation of this attribution-behaviour link through teaching-learning techniques and student-teacher interaction strategies can have a positive impact on overall learning outcomes of students.

Conclusion

The primary flaw of the RTE Act is in its failure to recognise the crux of the education crisis in the country as a problem of low quality education ascertained by low learning outcomes of students. The provisions must

be revisited with the view that the education sector is only as strong as the potential human capital it seeks to develop. Without improving learning outcomes, the RTE Act, 2009 will remain a symbolic gesture of government reform misaligned with the issues of the education sector and ineffective in eradicating the education crisis that plagues the country.

We need not write-off the RTE Act, 2009 as another failed legislation but should rather see it as a stepping stone to a reform that considers the people perspective of the issue. ○



Nisha Vernekar

Nisha Vernekar completed her undergraduate degree in Economics from Symbiosis International University, Pune in 2015. While a student of economics, she is passionate about art, marketing, social research and cultural studies. She is presently working in Affordable Business Solutions in Bangalore and looking to pursue a Masters degree in Behavioural Sciences.

Achhe Din - AAP ki Meherbaani

SHIRISH POTNIS

It is true that the whole country is still waiting for achhe din. Now, you can either passively wait for the achhe din to arrive or do something which will force achhe din to visit your quarters. The aam aadmi may or may not be in a position to bring home achhe din for himself, but the Aam Aadmi Party (AAP) leadership is surely full of capable guys who can do something about it if they make up their mind. And made up their mind they have. The Delhi State MLAs have unanimously decided that “enough is not enough” and have taken the matters into their hands.

AAP leaders are humans like you and me and they feel, like all of us, that their salaries and perks need a revision (upward, obviously). Well, honestly, there is nothing wrong with that. Show me anyone who doesn't feel that he / she is (grossly) underpaid, right from the Class IV employees to the Cabinet Secretary to the Government of India in the babu-land and from trainees on shop-floor to the (professional) Managing Directors in private sector. But not all of us are lucky enough to get our way. Even the mighty Cabinet Secretary has to wait for the Pay Commission to recommend revision of pay, something which happens once in ten long years. He may make his suggestions regarding the revisions that he would like to see, but finally he has to accept whatever decisions are taken.

But all this is only for the billions of mere mortals like you and me. The Chosen Ones

“MLAs of the Delhi Assembly have, by an overwhelming majority, decided to rectify their penurious status and given themselves a raise which shall hopefully pull them above the poverty line.”



(ironically, they are chosen by mere mortals like you and me) choose to tread a different path. No Pay Commissions for them and no ungainly haggling over rate of inflation and Dearness Allowance for them! Just appoint some “independent committee” headed by a retired bureaucrat who knows which side of the slice of baked dough has a thick layer of golden yellow fat applied to it and who is only too happy to echo his masters' voices.

MLAs of the Delhi Assembly have, by an overwhelming majority, decided to rectify their penurious status and given themselves a raise which shall hopefully pull them above the poverty line. The MLAs will henceforth get ₹ 2.35 lakh per month instead of the paltry ₹ 88,000 they were getting earlier and, thereby, maybe just keep the wolf off their doorsteps. Phew! Thank God!

AAP, which enjoys a strength of 67 in a house of 70, was expecting that the bill ratifying the proposed amendments to their pay-packets would sail through without any



opposition. But the spoilsport BJP MLAs (numbering two) tried to oppose the bill and had to be shouted down. Looks like the BJP guys themselves don't believe that achhe din aanewaale hai.

My friend, Guy Wise, says that all this gives a different twist to the classic Lucknowi tale of two nawabs missing their train in their time-honored protocol, "Pehle aap", "Pehle aap". Here we have a bunch of modern-day nawabs clamouring "Pehle AAP", "Pehle AAP" as they all jump onto the gravy train. ◦



Shirish Potnis

B.TECH. '76 CHE, H-3

Shirish did his schooling in Mumbai at IES - English Medium School. Subsequently he lazed his way through IIT Bombay and IIM Calcutta at the end of which he was able to come out with a sense of humour, if not anything else. This sense of humour would see him through years of corporate skulduggery, trying to devise strategies for growth and trying to implement these in the impossible environment that is questionably termed as "business" in India. His writing reflects his efforts to seek humour in day-to-day life and his love for science and technology. Shirish lives in Mumbai with his better half Surabhi who teaches Chemistry in St Xaviers college and is responsible for maintaining equilibrium in their lives. They have two children Deepti and Tanmay, both of whom are now settled in US.

Trek to Roopkund

SHIRISH WAGHULDE



Roopkund has an air of mystery associated with it. Many a folklore and tale are told about this glacial tarn which lies at 5020 m, hidden below a ridge on the periphery of the Nanda Devi Sanctuary in the Chamoli District of the Garhwal Himalayas. The lake is frozen almost throughout the year. In the lake lie some 300 corpses, well preserved due to the cold and clearly visible when the lake thaws. The bones have been dated to the 14th century AD.

The widely accepted folklore relates them to the curse of Nanda Devi when a king brought his pregnant queen on the pilgrimage and she delivered a child thus polluting the sacred mountains. An annual pilgrimage or *yatra* or *jat* (as the locals call it) to Roopkund takes place around August–September. This culminates at Bedni Bugyal. Every 12 years, the Raj Jat is undertaken where pilgrims follow a sacrificial ram to Roopkund and thence over the Junar Gali Pass to Homkund. Thousands of devotees take part in the Raj Jat, many of them barefoot and scantily clad, braving the elements on sheer faith. A more

probable theory to explain the corpses in Roopkund is that during one of the Raj Jats, some devotees must have slipped down the treacherous slopes which lead to the lake and met their icy graves.

The 12-yearly Raj Jat was held this year and more than 75,000 devotees took part in the *yatra* of which nearly 3,000 made it to Roopkund and Homkund. After much debate as to the prudence of going there after such a *yatra*, which would have disturbed the area, we decided to proceed anyway. Our plan was to follow the route of the Raj Jat from Wan to Roopkund, cross over the Junar Gali and go to Homkund and then come down to Ghat. The government had put in extra effort at repairing the paths along the entire route for the *yatra* which helped us. On the negative side, most of the campsites were littered with wrappers and plastic.

Chandrashekhar Kerkar, K. Madhu, Milind Bhide, K. Ramachandran, Rahul Natu and I left for Delhi by the Paschim Express on 23-Sep-2000. Kishore Lokre, who joined us at Delhi, had been entrusted with the task of



procuring the provisions and rations for the trek. After repacking our sacks and kits, we boarded the Ranikhet Express from Old Delhi on the night of 24-Sep-2000.

Early next morning, at around 0500, we alighted at Haldwani. We hired a Sumo to take us to Debal, about 250 km from Haldwani. On the way, we stopped at Gwaldham to engage a guide for the trek. Friends, who had been on this trek earlier, had recommended the name of Kunwar Ram. He seemed to be a well-known personality and we had no difficulty in finding him. But, unfortunately, he was already engaged by another group to go to Sunderdhunga. He suggested that we take his son, Navin Chander, and we accepted his suggestion. Keri and Milind stayed on at Gwaldham to work out the details of the trek and hire porters while the rest of us proceeded to Debal where we stayed at the Garhwal Mandal Vikas Nigam's (GMVN) rest-house. We bought some apples, vegetables, and kerosene at Debal.

The next morning, at around 1000, after Keri and Milind arrived from Gwaldham along with the guide and porters, we took a jeep taxi to Lohjung (2133m). Jeep taxis ply between Debal and Lohjung, a distance of about 20 km, and charge ₹35 per head. The jeepable track to Lohjung was being extended to Wan. Lohjung also has a GMVN

rest-house. After lunch at the local dhaba, we started our trek at around 1400. Our destination for the day was Maladhar, a camping ground about 5 km from Lohjung, which we reached by 1600. Maladhar is slightly downhill of Lohjung and the route passes through some lovely forests.

The Maladhar camping site is like a saddle and has beautiful mountain ranges all around. We pitched our tents and, with some difficulty, managed to cook our dinner. There is no shelter at this site and our stoves didn't function too well in the strong winds which started blowing in the evening. Water is available from a beautiful stream slightly downhill about 100m away. Walking down the wooded path to the stream the next morning, we were treated to a melodious concert of bird songs.

The next morning we proceeded towards Wan (2439 m), about 6 km from Maladhar. After an hour's climb followed by a long walk for another hour or so, we crossed a stream to enter Wan. Wan is a biggish village and boasts of an English medium school as well. The pretty stone houses in the terraced fields ripe with the red rajgira-like grain (called chuha in the local tongue) and the yellow mustard were very picturesque. The GMVN rest-house at Wan is about a km away from the village and the steep climb to the guest house took us nearly half an hour. The rest-house, sitting on



top of the hill, gives a great view of the village. We had a good invigorating bath in the ice cold waters of the stream flowing nearby.

Mr. Negi, who manages the rest-house, was very friendly and helpful. He not only gave us some wheat flour, but with the help of the porters served us hot rotis as well. Kishore demonstrated his culinary skills in cooking a delicious sabji and Madhu, as usual, prepared a delightful sambar.

Wan also gave us a sampling of the magnanimity of hill people. The lid of the kerosene tank of one of our stoves fell off on the way from Maladhar to Wan, making the stove absolutely useless. The spares in the small shop of the village did not match our stove. Realising that we would be seriously handicapped, the shopkeeper offered his own personal stove to us in exchange! Luckily the lid of his stove fit on ours and without any hesitation he gave it to us and charged us only ₹10 for it.

After an early breakfast the next morning, by about 0830, we left for Bedni Bugyal (3554 m), some 8 km away from Wan. We climbed gradually for about an hour to reach the top of a hill. We could see the tip of Trishul from this top. We then descended for about 20 minutes to reach a bridge to cross a stream in the valley below. Then began a steep climb to Gharoli (3049 m) which took us nearly 2

hours. The path passes through thick forests but water is not available anywhere near. Besides the steep gradient, a continuous drizzle made climbing difficult. At Gharoli we found an open concrete structure: just a roof supported on pillars with short (about a foot high) walls on the sides. It was extremely cold and we stopped there for a much needed rest and to refresh ourselves with some tea and snacks.

Then began another steep climb which lasted 45 minutes. We suddenly found ourselves out of the tree cover and onto the meadows on top of the hill. Another half an hour's walk on the grassy plateau brought us to the beautiful meadows of the Bedni Bugyal. As we neared Bedni, we saw a lot of mouse hares curiously peeping at us and then scurrying away to disappear into their burrows as we moved near.

Bedni Bugyal is an expansive alpine meadow with gradually undulating slopes. A bugyal is a grazing alpine meadow. In the flowering season—August to early September—the meadows are full of colour. We reached well past the flowering season and had to rest content with the verdant green. At the annual Roopkund yatra, regional sports and cultural programmes are held here. On the banks of the pond at Bedni Bugyal is a small temple of Nanda Devi. Inside is a very small idol of the

Devi – not more than 150 mm high. The small temple and the tiny idol in the wide open expanses surrounded by towering mountains was in stark contrast to the huge Ganesh idols in crowded Mumbai. It made us wonder whether it was the hillman's symbolic way of expressing our insignificance in the larger scheme.

The peaks of Chania Kot, Nanda Ghunti (6310 m) and Trishul (7130 m) are seen to the north–north east of the bugyal. Trishul and Nanda Ghunti were to be our constant companions throughout the trek. Nilkanth and Chaukhamba appear on the northwest–west horizon. It was raining intermittently and the sky was overcast so we couldn't see any of the snow-capped peaks when we arrived at Bedni at around 1530. The rain was accompanied by hail and soon the ground was covered with frost.

There are some small huts built by the forest department and also a 2-room rest-house built by the Zilla Parishad which provide good shelter. A stream flows very near the rest-house. We stayed at the Zilla Parishad rest-house. Later in the evening we were treated to a colourful sunset. After a dinner of dal, rice and cabbage, we retired early to bed. The night was cold and the temperature outside must have fallen below zero for, when we woke up the next day, the ground was covered with frost and the nearby stream had stopped flowing.

In the morning, the skies had cleared up and, as we came out of the rest-house, we could see Nilkanth and Chaukhamba bathed in the golden glow of the rising sun. We could also clearly see the peaks of Nanda Ghunti and Trishul. The reflection of these peaks in the clear and calm waters of the pond was also a wonderful sight. This was a day of rest and, after a leisurely breakfast of upma, we decided to go to Ali Bugyal some 5 km away. Ali Bugyal is as beautiful, if not more, as Bedni Bugyal. While Bedni is sheltered by

mountains on three sides, Ali Bugyal lies on top of a hill and provides a lovely view of the surrounding ranges. It would be great to camp at Ali Bugyal but water is not easily accessible. From the top of Ali Bugyal we could see many other smaller meadows on the hilltops of the surrounding ranges.

At about 0800 next morning, we left for Bhaguwabasa (4667 m), 8 km from Bedni. The path goes up the hill on the east of Bedni and an hour and a half of climbing brought

**In the lake lie some 300
corpses, well preserved due
to the cold and clearly visible
when the lake thaws.**



us to the saddle top. This was the last point from where the Bedni Bugyal could be seen. The path forks here with the left arm going to Kunol and the right arm, descending slightly towards Trishul, goes to Bhaguwabasa.

About 2 km away is Patthar Nachani (3558 m) which is a good camping ground. According to folklore, some king on his way to Roopkund had camped there with his entourage. He entertained himself with dancing women. Nanda Devi, the reigning deity, outraged by this, turned the dancing women into stone statues and hence the name – Patthar Nachani – the Dancing Stones. There are no signs of these statues today and neither has any living soul seen them. But the locals strongly vouch for the veracity of the story.

Now began a steep climb up the face of the mountain to the top of its ridge. It was quite cold and as we neared the top, the lack of sufficient oxygen at the higher altitudes began to take its toll. It took us more than an hour and a half of continuous climbing to reach the top. At the top is a small temple of Kelva Vinayak – an idol of Ganesh in black stone. It is a practice to make some offering here before proceeding further. The guide and

Careers@Singapore: Data Analytics



Contact Singapore had a chat with Manik Bhandari, Director of the Accenture Analytics Innovation Centre (AAIC), to find out how to unlock the hidden opportunities behind data analytics.

Organisations have always known that there is an enormous goldmine of information embedded in the data they have collected. The trick has always been in getting to it. Accenture believes that with modern data analytics and programming techniques, combined with astute business insights, we now hold the key to unlocking the secrets in these vaults.

However, a lingering challenge remains where the demonstrable benefits of data analytics fell short of the business managers' expectation. "This could be due to anything from not defining the right question to be answered, an inexperienced analyst and unclear datasets to incorrect application of insights to the business problem at hand," explained Manik Bhandari, Director of the Accenture Analytics Innovation Centre (AAIC) in Singapore.

This is where analytics centres, like the AAIC, come in. They are able to help bridge this gap by providing data analysis and consultancy as a service to help business managers discover the potential of data analytics, by

helping them focus on the outcomes, and not worry about the analytics.

"We see ourselves as value architects who are able to help clients quantify results to demonstrate the power and application of data analytics in their organisations," Manik said. The AAIC team will guide the

|| The range of data analytics application is extremely wide," commented Manik, "In a way, the potential of data analytics is limited only by the enthusiasm of the business manager and the resourcefulness of the analyst. ||

clients through the entire analytics project – educating, encouraging and reassuring them along the way.

To Accenture, Singapore represents a unique value proposition for data analytics. "The country is well-connected and organised. We are able to collaborate effectively with policymakers who have a clear interest to improve public services and citizen engagement. It presents us with an invaluable opportunity to create scalable models using real-time data which we can then replicate for application in other cities," said Manik.

In addition, there is a large and accessible scientific community for consultation and recruitment. The public sector is progressive and prepared to invest in cutting-edge innovation. The centre is also able to acquire clients who are keen to pilot and apply data analytics in their operations.

AAIC hopes that its efforts together with client organisations will eventually generate breakthrough solutions that will positively impact the lives of Singaporeans and global citizens. "It's just a matter of time," promised Manik.

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porters were a bit dismayed that we had not brought anything to offer. Kishore came to the rescue and chanted some Sanskrit prayers which seemed to put the porters at ease. A slight descent on the other side brought us to a somewhat level path and in another half an hour or so we reached Bhaguwabasa at about 1330. Beyond Kelva Vinayak, the path was covered with fresh snow. After we reached Bhaguwabasa it snowed lightly for nearly an hour.

An enterprising resident of village Wan has constructed a 3-room stone house at Bhaguwabasa which he rents out to trekkers and yatrisat ₹200 per room per day. During the trekking season he also stocked some provisions here. He had come to close down his shop for the season and took only ₹300 from us for the 3 rooms. Though the house did provide reasonably good shelter, the roof was not good enough to prevent rain and snow from coming in. Besides, doors to two of the rooms had been torn down by some earlier residents (most probably to be used as firewood) and the wind made the place unbearably cold. We finally pitched our tents inside the house which made the place a bit cosy.

Some of us were affected by high altitude sickness but recovered soon after steaming cups of soup and some rest. That night was the coldest we experienced and even the water in our water-bottles turned to ice. Walking

around was difficult as the frost on the grass outside made it very slippery. It was so cold that it took us more than an hour to make 12 cups of tea on our stove, and even then the water did not come to a boil. Most of us were not prepared for such cold in terms of warm clothing and sleeping bags and we were forced to rethink our itinerary. We finally decided to drop the plan to go to Homkund which would cut down our programme by 3 days.

After a breakfast of noodles and tea, at around 0845, we left Bhaguwabasa for Roopkund (5020 m). The distance is only about 5 km, but due to the altitude and the continuous ascent on the steep snow-covered path, we took nearly 2 hours to reach Roopkund. Roopkund is in a bowl in the mountain, and on the top of the bowl we found some skulls (purportedly retrieved from the lake) arranged on an altar with a flag posted besides it. Down below, the lake was frozen and we couldn't see any of the corpses. Over time, landslides have also reduced the size of the lake and the guide told us that nowadays only a few corpses can be seen when the lake thaws.

We then proceeded to cross Junar Gali (5354 m). It was a steep climb and the path was covered with snow. Due to the low levels of oxygen in the air at that altitude, we became breathless soon and had to stop to catch our breath every 4-5 steps. From the top we got a spectacular view of Trishul. The

descent on the other side of Junar Gali was as steep and was covered with fresh snow 100–200 mm deep. The going was difficult. We covered the snow patch in about half an hour and then had to pick our way through a loose rocky path. It took us another 3 hours to reach the level ground of Shila Samudra (3500 m) near the base of Trishul. We reached camp at about 1530.

Shila Samudra, as the name implies, is a rock strewn place. The awesome Trishul, just

A more probable theory to explain the corpses in Roopkund is that some devotees must have slipped down the treacherous slopes which lead to the lake and met their icy graves.



a few of km away, towered over all else. In the evening, on the lower slopes, we saw what looked like a herd of wild goats. A massive glacier lies buried under rocks along the base of Trishul. The stream flowing from this glacier joins the Nandakini (a tributary of the Alaknanda) which flows down from Homkund. Homkund lies on the mountain to the north of Shila Samudra.

A huge boulder has formed a sort of cave and provides good shelter. We pitched our tents near this boulder and used the cave as the kitchen. The guide and the porters chose to sleep in the cave itself. Water had to be brought from a stream nearly 100 m away. By evening the water in the stream had started to freeze.

The next morning was not too cold and, as we were getting up, we witnessed an awesome avalanche down the slope of Trishul. The avalanche was accompanied by a loud noise much like a thunderclap and lasted for a minute or so. Within minutes the ambient

temperature dropped. Even the water vapour from our respiration which had condensed on the inside of the tents turned into a thin sheet of ice.

We packed up after the sun came out and left for Laat Khopdiat around 1000. The path to Laat Khopdi moves along the Nandakini river. From Shila Samudra, we had to descend down to the river over a very narrow ridge full of loose, precariously-balanced rocks. It took us more than an hour to cover a couple of kms. The path beyond the ridge climbed down gradually. As we descended we could observe the classic transition from meadows to birch trees to bamboo clumps and conifers to mixed forests. Laat Khopdi is a camping ground about 12 km from Shila Samudra. We reached Laat Khopdi at about 1415, and after a quick snack of noodles decided to proceed further to Tatda another 6 km away. The route to Tatda goes through dense forest and along the way we saw pug marks of leopards and bears and leopard droppings. We reached Tatda just as the sun went down and found the entire village deserted.

The houses in Tatda belong to residents of Sutol which is some 4-5 km downhill. They are used as summer dwellings when the people come up for farming/grazing in the highlands. One of the residents has earmarked a room on the first floor of his house for tourists. We stayed in this room.

The arrangement is very interesting. A ladder placed outside the house leads to this room which is always open. Anyone can come and stay here even if no one is around to collect the rent. When you go down to Sutol, you are expected to pay the rent of ₹150 per day to the owner of the house who also happens to own a shop in Sutol. Next morning while going down, we came across a lot of villagers who were coming up to work on the construction of a bridge near Tatda and one of them happened to be the son of the owner of the house who collected the rent from us. We met

the owner some 15 km away near another village, Sitael, and he too enquired whether we had stayed in his room. He simply took our word that we had paid the rent to his son!

We left Tatda early the next morning after a light breakfast thinking that we would get something to eat in the shop at Sutol. But when we reached Sutol, we found that village deserted too. Most of the residents had either gone up to work on the bridge or gone to their fields. One young boy agreed to make some black tea for us and another woman sold us some cucumbers. After this unusual snack we proceeded towards Sitael another 10 km away. The path descends into the valley to a bridge over a stream. Beyond the bridge, we had to climb up for an hour or so to the top of the hill and then descend down to the river and cross it to reach the village. We stayed at the Forest rest-house. Negi Hotel, the local dhaba, served us a simple but delicious dinner.

The next morning we walked down about 8 km to Chefna from where we took a Jeep taxi to Ghat. At Ghat we engaged a Sumo to take us to the rafting camp of Adventure Links at village Sintahli near Kaundilya about 30 km upstream of Hrishikesh. The camp is set up on a big beach on the Ganga. A small bay which cuts into the beach provides a good swimming pool reasonably isolated from the flow of the river. After reaching camp at around 2030, we had a swim in this pool. Though the water was cold the swim was quite refreshing. It also gave us quite an appetite for the delicious dinner which followed. The next morning we went to a small waterfall in the neighbouring hills. The bath beneath this fall was like a massage and did a lot of good to our aching muscles.

After lunch we went white water rafting down the Ganga from the campsite to a place called Marine Drive (!) about 15 km downstream. The rapids in this stretch are not too severe and are rated not more than 4 on a scale of 10. The amazing power of the rapids

threatened to overturn the raft and we had to put in a lot of effort to keep it right and at the same time not get thrown overboard. On some relatively calm stretches KRam, Kishore, Kerri and I, with our life jackets on, jumped out of the raft and swam or rather let ourselves be carried by the flow. It was a wonderful experience. Maybe someday we might be able to go on a rafting expedition down one of the Himalayan rivers... ◦



Shirish Waghulde

B.TECH. '81, M.TECH '84,
PH.D '96, MEMS, H-7

Shirish is an avid nature lover with a passion for the wilderness. He has been the CEO of IITBAA and an adjunct faculty at IIT Bombay. Known as 'Mahim baba' to a few and a gadfly to many. Shirish's avowed intention of "doing nothing" is belied by his ever questioning mind and roving feet that always carry him to trails rarely traveled.

Erratum 1: In the print edition of Fundamatics 2Q2015 issue, in the article Water, Environment and Technocracy (pages 46-49) by Himanshu Thakkar, the following concluding paragraph of the article was inadvertently not printed:

This is not an advocacy against large dams. These two snapshots are provided to raise questions even about the performance of India's dams. I feel institutes like the IITs need to grapple with real life issues like these in real time, in an independent, fearless way. I hope that happens and soon!

The Fundamatics team sincerely regrets this error.

Erratum 2: In the print edition of Fundamatics 2Q2015 issue, in the article Varsha Stuti – The Genesis (pages 26-28) by Janak Daftari, on page 28 (author biography) we had stated the author is a Bajaj and Stockholm Water Prize awardee. This was a mistake; the author is not a recipient of the awards mentioned above. These awards were won by Dr. Rajendra Singh with whom the author, Janak Daftari, works actively. Please note that the author is not responsible for this misstatement. The Fundamatics team sincerely regrets this error.



Creative Bees at Fundamatics

ILLUSTRATION



Shreyas Navare

M MGMT, SJMSOM, '08,
H-13

Shreyas Navare, Mumbai, Senior Manager, Marketing and Corporate Communications at a private bank. He freelances as a Editorial Cartoonist for Hindustan Times. He has covered elections in 6 Indian states through the eyes of a cartoonist on behalf of HT. Shreyas has held many cartoon exhibitions, two of which were inaugurated by Dr. A. P. J. Abdul Kalam. His first solo international cartoon exhibition was held recently at Bangkok. His second exhibition was held at Nehru Centre recently. Cartoons featured in this issue are from the exhibition.



Arun Inamdar

Arun Inamdar is an example of the breadth and depth of talent in IITB. A geologist by training and a professor at the Centre of Studies in Resources Engineering, he is a perceptive cartoonist and caricaturist with a soft corner for the campus and its ecology. His caricatures have brought smiles to an array of celebrities who have visited the campus and his cartoons hold up a mirror to our follies without causing offence. An alumnus of C76, he can be depended upon to come to the rescue of the ACR office and IITBAA with his talent at very short notice.



Abhishek Thakkar
B TECH, CIVIL E, '03 H-5

Abhishek Thakkar or just 'Thakkar' as he was known throughout campus is an alumnus of H5 from '03. Having a lot of it, he loved throwing his weight around, and escaped many a bumps which he'd have got for his PJs. Now he channels all that creative energy in designing beautiful, scalable web and mobile interfaces.



Anand Prahlad
M DES, IDC, '07, H-8

Anand Prahlad is an independent graphic designer and artist. When not designing books, magazines, logos or illustrating, he is an active gardener, culinary expert and amateur musician. He runs www.magic-marinate.com, a food and travel blog, and also www.thenewvitruvianman.com, where he writes and illustrates articles on design, gastronomy and music.



Saurabh Kolge

Saurabh Kolge is a self taught illustrator and graphic artiste. His informal education in design happened simultaneously with his formal education in dentistry in old and dusty Aurangabad. Hiding in gardens and shady nooks during classes, he learnt to fine tune his craft which filled his notebooks instead of anatomy and pharmacology. Over time he has developed a unique style that fluently adapts to the requirements of his now chosen career, whether corporate identity, branding or digital paintings. Apart from design, he is passionate about felines, fantasy fiction and farming.

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