

INDIAN STATISTICAL INSTITUTE ALUMNI ASSOCIATION



SOUVENIR 2014

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FROM THE CHAIRMAN, ISIAA

TAPAN KRISHNA MUKHOPADHYAY



B. Stat. Hons. (1967); M. Stat. (1968)

Worked for Steel Authority of India from 1970 to 1981 and for Hindustan Paper Corporation from 1981 to 2004.

It is common knowledge that the Indian Statistical Institute (ISI) has always attracted the brightest of minds to its halls of learning, and many of its students have, in addition, brought with them multitudinous talents that have made them memorable to those who have come in contact with them. There has always been an ongoing effort on the part of the ISI Alumni Association (ISIAA) to bring out volumes from time to time, not only to provide a platform for ISI alumni to share fond memories of their alma mater but also to showcase the exceptional writing talents of some. Unfortunately, it has not been possible for us to bring out any volume since 2012, when the wonderful edition, TAARPOR, edited by alumnus Srinivas Bhogle was released. This volume, with several brilliant pieces of writing and an amazingly professional layout and presentation, set the bar too high for us, I suppose! Anyway, I would like to take this opportunity to acknowledge with immense gratitude the contributions of the editor, the numerous writers and the anonymous donors whose support, monetary and otherwise, made this volume a brilliant and cherished reality.

As usual, bringing out a fresh volume for the Indian Statistical Institute Alumni Association turned out to be a tough proposition. The request for articles sent out to ISIAA members and other alumni generally did not elicit much response, for very understandable reasons. After all, we know that they are all doing very well in their chosen fields, and that makes them extremely busy people. It is our good fortune that a few of them did manage to find time from their busy professional lives to put down their thoughts on paper and create articles for this publication. We extend our sincere gratitude to all these alumni for their contributions. Special thanks are also due to the Repro and Photo Unit of ISI for the design of the cover and also for sharing some of the photographs. This Unit had organized an impressive exhibition of photographs highlighting the association between Jawaharlal Nehru and our alma mater, on the occasion of his 125th birth anniversary on November 14, 2014. We have reproduced a few of these photographs in this volume with the kind permission of the unit. This publication would not have seen the light of day without the relentless effort of a former Secretary of ISIAA, Dr. Amita Pal, and M/s Reprosales India Pvt. Ltd., who took special care of the printing of the volume despite the short notice. As on previous occasions, a limited number of printed copies will be available and its soft copy will be uploaded to the ISIAA website.

On behalf of ISIAA, I express the fond hope that ISI alumni will find this new volume interesting, and that it will be possible to bring out another volume in the not too distant future.



M.S. (Q.E.) (2014)

Pursuing PhD in Economics at the University of British Columbia

Once a disciple asked Gautama Buddha, “O Lord, where have we all come from? Where do we all go after death?”

I do not know whether Lord Buddha actually knew the answer to this perennial question of humanity, but what he gave as a reply (it is hardly a reply though, if not a pert backchat) not only bypasses the exact question asked, it also steers his disciple away from asking such ‘irrelevant’ questions. He says, “It is none of your concern. What you should be really concerned about is that you are unhappy. You do not get what you desire, cannot preserve whatever little you get and cannot be happy with what you can preserve. Hence, getting rid of this cycle of unhappiness is what you should be bothered about and nothing else.”

Religions have differed in their prescription of ways people can go past this vicious cycle, but they all agree on one account - achieving the ultimate happiness by treading the path of denial of sensory pleasures. *“All ethical gymnastics consists therefore singly in subjugating instincts and appetites of our physical system in order that we remain their masters in any and all circumstances hazardous to morality; a gymnastic exercise rendering the will hardy and robust and which by the consciousness of regained freedom makes the heart glad.”* (- Immanuel Kant, *Metaphysics of Ethics*; translated by Semple)

In effect, the claim is, if ever a person tries to achieve happiness beyond momentary pleasure, there can be no other way than taking resort to carnal rationing. Apparently, though it might seem paradoxical that we are seeking happiness through discomfort, the basic logic behind this school of religious beliefs nevertheless is pretty straightforward (at least as far as I can fathom) -- if only there is reduction of one’s innate desires through willful self-deprivation can it be possible to achieve happiness, sans dependence on worldly possessions and emotions.

I have heard cynics lamenting on how our generation (which is arguably the product of the so-called new-millennium consumerism) has completely forgotten this fundamental precept of life and thus has outgrown the need of a religious belief-system. While it is certainly true that commodity-fetish is a hallmark of our generation (so much so that often the only meaningful calibration that we can provide for our happiness is solely based on amounts of material possession), I cannot say that this is anything to be criticized per se. I believe we have entered an era of a diametrically opposite religious belief-system, where people try to understand the worthlessness of worldly passions not through renunciation (as in the erstwhile religious beliefs), but through over-indulgence. Notice that even in the new system, the goal of achieving happiness transcending material boundaries has not changed. What has changed is that people are no longer conscious about actually choosing a particular way of life to achieve happiness. They are simply indulging in the material pleasures to the fullest extent permitted by their varying personal

resources, without thinking whether this will facilitate their freedom from worldly possessions. In other words, previously people consciously used religion and its associated morality to deviate their attention from sensory pleasures, whereas now people do not feel any conscious urge to involve in any such *ethical gymnastics*. However, this does not mean that they do not eventually land up with the same goal of achieving happiness. They consciously believe that unbridled consumption is capable of rendering them happy, but very soon they eventually realize that renunciation beyond a certain level of consumption is absolutely necessary to be happy. Obviously, today there are idiosyncratic differences in how fast (or with how much consumption) a person can reach that threshold of consumption beyond which he finds any additional consumption as conspicuous and hence abhors any such, just as there used to be in the past, interpersonal variations in how efficiently a person could impose carnal sanctions on himself. Evidently, just as there was no guarantee in the erstwhile days that a person would find it worthwhile to seek redemption from the vicious cycle of more-greed-more-unhappiness, today also there is no guarantee that an individual will ever reach his threshold consumption level. Thus, I feel that the new way of achieving happiness in life that has evolved in the cradle of consumerism is limited by humanity's innate desire to decongest one's life after a threshold of consumption, by limiting consumption.

I know sceptics will disagree with me, saying that my idea does not work in the real world, because if it did, we would not hear Steve Jobs blatantly proclaiming, *"You can't just ask customers what they want and then try to give that to them. By the time you get it built, they'll want something new."* I would retaliate by pointing out that if the society wants new things for consumption, it does not necessarily mean that it wants more things for consumption. Moreover, even if a certain section of the society actually does want more consumption, it is only because that section has not yet reached that threshold consumption.

There is only one snag in the new system - the subjectivity of adequacy. While the older school of thought urged people to impose self-restrictions, the new system does just the opposite - it fans the craving for consumption in people until they are satiated. This leaves open the possibility that an individual, particularly one who cannot afford to buy enough consumption so as to be satiated, is never satiated. In the classical religious belief (if you allow me this rather ambitious nomenclature), people, who did not have 'enough' resources, were as worthy of finding happiness in life as were their richer counterparts; but this egalitarianism is lost in the new era. Thus, our religious epoch has seen what I prefer to call "religious inequality" - people are no longer equals even in their access to transcendental happiness, let alone worldly pleasure. I believe that the only way to get past this new kind of inequality is to make our Buddhist disciple believe that being the richest man in the cemetery or going to heaven after death does not matter; what matters is going to bed at night saying one has done something today to satisfy his needs better and limit his greed further. Thus, the ability to distinguish between one's need from one's greed is the only education that can solve this problem.

As we leave ISI, we must learn to recognize this religious vacuum that is plaguing a large section of our society. I know for sure that most of my ISI friends will achieve enough material resource as well as the required prudence to reach the consumption-threshold I discussed here, but my essay will prove meaningful if they can be instrumental in alleviating this "religious inequality" from society in whatever humble way they can.

REMEMBERING KULDIP SINGH

SRINIVAS BHOGLE



B.Stat (1977), M.Stat (1978)

Obtained his doctorate from Paris, worked for over two decades as a scientist at National Aerospace Laboratories and, after a forgettable two-year stint as VP at Cranes Software, is now Director at TEOCO Software Pvt Ltd. He has lived nearly half his life in Bangalore but cherishes his five years at Calcutta (not Kolkata) much more.

His full name was Kuldip Singh Aulakh. Kuldip joined M1 the same year I joined B1, in 1973.

I hardly saw anything of Kuldip during our early months; we were in the Third Block, Kuldip was in the First Block and the exciting U-Block was in between.

I think I started interacting more with Kuldip when stories started filtering in from the volleyball court. Kuldip, we B1's decided, was a nice sort especially because we considered him to be an "impartial" referee (impartial, of course, meant that he judged all those close decisions in our favour!). Later Kuldip told me that he didn't like being a referee because he had to "displease at least one of the two teams".

That was Kuldip's first magical quality: he was exceptionally nice and generous. He wanted to be nice to everyone! "*Kisika bura karna mujhe achha nahin lagta*", he would often say to me.

We spoke Hindi most of the time, probably because in his early years Kuldip didn't speak too much English -- or, for that matter, speak too much. Kuldip was always with the "gang", but was never the big talker. He was a far better listener and knew how to nod to keep the conversation going.

Kuldip was a permanent fixture at all sporting events (only the release of a new Dharmendra film could tempt him away), and most of us concluded that Kuldip couldn't be a very bright student. That's why it was such a surprise to learn in the second term that Kuldip was "running all 8 A's"; there were however no 'A-stars'. "*Yaar, hame star kyun lena hai? Let Kesar get the stars*", Kuldip told us. [Kesar Singh, the topper in that M.Stat. batch, too sadly passed away a couple of years ago]

At ISI, there was nothing more holy or sacrosanct than A-stars. And for most normal mortals, even getting an A required a certain effort (especially with the "difficult" B V Rao around!). So Kuldip's philosophy was extremely attractive. Certainly, I embraced it whole-heartedly especially.

Kuldip and I really became close chums after we found that we shared the same love for Hindi movies and old Hindi film songs. In the matter of seeing movies, Kuldip beat most of us. My favourite story is about the time Kuldip went to see the 1.30 pm first day first show of *Bobby* at Anandam. We were waiting for Kuldip at 4.30 pm to get the first feedback on Dimple Kapadia (Dimple, to be honest, was our only concern). But it wasn't till 8.30 pm or so that we saw Kuldip. "*Yaar, Kuldip, kahan thhe?*" "I told you, I went to see *Bobby*". "But you went for the 1.30 show!" A little sheepishly, Kuldip confessed that he stayed on for the next show because "*Dimple bahut cheez dikh rahi thi*". "But all shows are full, how did you manage that?". "*Yaar, the Anandam manager is a Sardar and he helped me*".

Kuldip knew a lot about old Hindi film songs because he spent so much time listening to them. During the 1974 Puja holidays we acquired a new record player in the hostel. The "rule" was that we could listen to songs only in the Central Hall, but Kuldip often managed to sneak the player into his room for his midnight "Rafi sessions". Kuldip was a fanatic follower of Rafi, partly because of the Punjab connection. He had to hide his love for Rafi because Kishore Kumar ruled in the hostel those days. But who can question Kuldip's love for eternal numbers such as "*khoya khoya chand*", "*din dhal jaaye*", "*sau baar janam lenge*", "*paradesiyon se na ankhiyan milana*" etc.? Kuldip especially liked Rafi's sad songs. "*Sun ke mujhe kuchh hota hai, aur us TK ko bhool jata hoon!*"

T Krishnan wasn't a Kuldip favourite when, as Dean of Studies, TK terminated Kuldip's fellowship. "*Yaar, I agree that I am doing no work. I didn't even mind when he cut my stipend, but this is too much!*", Kuldip would tell us. We of course couldn't agree more. Running down poor TK, or any other teacher, was an emotionally uplifting experience.

But what was Kuldip really doing at ISI hanging around for more than two years after his M.Stat? My guess is that Kuldip didn't know where to go and immensely enjoyed living on the ISI campus. So he kept postponing his next move; looking back, TK's tough decision was good for him. For us, though, it was great to have Kuldip around. A lazy Kuldip was even more delightful company! He would wake up around 10.30, walk in without his *pagri*, usually with his red *lungi* and *kurta*, to the mess. The kind Kali would make him a *keema paratha* (Kuldip often had two plates). Then Kuldip would move to the Central Hall to take a look at the morning papers. A movie later in the day was a possibility. Or, he would get a sudden *jhatka* to work and carry his deck of computer cards to ISI. By lunch time the fervour was spent and Kuldip would retire for a well-earned afternoon nap in his favourite First Block room (which he never deserted). A chat about East Bengal's prospects in the league or Sunil Gavaskar's batting performance would start the evening. And as darkness fell, there was carrom, TT or shuttle on the agenda. If there was load-shedding, we would sit on the *khaat* outside, swat mosquitoes and curse the West Bengal government.

Kuldip was naturally shy and quite tongue-tied in the company of ladies (probably because he had no sisters). Before I met him with his wife and daughter (the two ladies in his life), I'd rarely seen Kuldip talk of the fairer sex. The only instance I can recall was when his Punjab Agricultural University Professor, Mrs Bal, visited ISI; Kuldip was extremely uncomfortable and inwardly shivering like a sheet. When she finally left Kuldip heaved a sigh of relief.

Given the madness of the times, that was enough reason to celebrate and all of us went off in our night clothes for a *lassi* at the Dunlop Sardar! Coming from the heart of Punjab, Kuldip never gave top marks to any *lassi* in Calcutta. "If you want to drink *lassi*, come to Punjab", he would invite us. One of our friends - Raghu -- actually accepted Kuldip's invitation. Raghu returned truly excited from Punjab. Apart from the splendid *lassi*, Raghu marvelled at the flowing beards of the elders in Kuldip's family (who mildly reprimanded Kuldip for trimming his majestic beard).

Kuldip was quite an accomplished sportsman, especially in his early years. He played all games except cricket and football (because he hated to run). I distinctly remember one of the annual sports events at the Mahalanobis stadium in the mid-1970s. As always, the rivalry between the workers and the students was great; with the youthful students having a distinct advantage. One particular year, the rivalry was more intense than usual. Veterans from the workers such as Satya-da and Salil Guha had vowed to teach the students a lesson especially in the shotput event. Wearing skimpy shorts and knee caps, Satya-da and others were huffing and puffing away at practice. In one of the heats, Satya-da even threw the heavy metallic ball quite a few feet away and ahead of the students' mark. There was a real crisis, especially because our star performer, Kuldip Singh was missing. Kuldip, it turned out, was fast asleep at high noon

after a late "Rafi musical evening". Loud knocks evoked no response and Kuldip's door had to be opened the usual way by creating a gap between the two doors and thrusting the hand in. Still, Kuldip appeared to be in no mood to get up: "*Yaar, kuch khaya nahi, pagri bhi baandhni hai ...*", until we told him that it was an "*izzat ka sawaal*". That did the trick. A half-asleep Kuldip walked in his *lungi* to the stadium and asked to see the length covered by Satya-da's best throw. He nonchalantly picked up the heavy ball and threw it many feet ahead of Satya-da's mark. Then he returned to bed saying "Satya will never throw so far in his lifetime".

In fact the only game where Kuldip was utterly sub-standard was carrom. Compared to the stars of the time, Kuldip was a glaring nonentity. As it turned out, I was just as lousy as Kuldip in carrom; so we decided to team up as a doubles pair! There was much amusement and laughter when our team was announced. But since Kuldip was popular, and I too had some small support, our matches attracted a fair crowd. These matches were great fun because both of us were utterly useless (and seeing us play was rather like watching a No. 11 bat in cricket). Every time Kuldip missed a shot (which, of course, happened every time he placed his striker on the board!), I would say that his "conception" was outstanding, only his "execution" was weak. Even Kuldip had no clue what would happen, but we pretended that he knew it all! Kuldip's falsely-acclaimed prowess in "conception" earned him the title of the "Wizard". To this day the sobriquet endures. If Irene Adler was "she" to Sherlock Holmes, "wizard" shall always be Kuldip to everyone who lived in the ISI Hostel during the 1970s.

But Kuldip had very considerable technical skills outside carrom. He eventually discovered his true ability when he became one of the earliest protégés of Sam Pitroda at C-DoT. Kuldip did amazing work while writing programs at assembly and machine level for telecom switches. Suddenly, Kuldip Singh was counted among the handful of top telecom experts in India. This didn't surprise me; in fact, I felt so proud that my friend was receiving such acclaim.

The days of freedom were over. Neither of us had the time to see Dharmendra or Rajesh Khanna movies. Kuldip got married, frequently went abroad and had a lovely little daughter called Neelu. Neelu was extremely fond of her father and Kuldip amazed me by being such a loving father and husband. After the 1984 anti-Sikh riots in Delhi and elsewhere, I rushed to meet Kuldip at his Bangalore residence. He looked a little shaken especially because events could have turned out very badly for his family travelling to Delhi by the Karnataka Express just a day before the shocking violence.

By now Kuldip was also the technology wizard at Axes Technologies and leading a very busy and stressful life; he was also putting on weight. Soon he shifted out of Bangalore to Chennai and we lost contact. For some time, Kuldip would call me if he was visiting Bangalore, but later even that stopped. Amazingly, and unbelievably, I all but forgot my dear friend. Until I saw that name and the photo of my dear friend in *The Hindu* late in June 2002 ... I confess I broke down; mostly with grief, but partly with shame.

How did that happen? How did I allow that to happen? How many true friends did I have like Kuldip? What is the world coming to? Where are we heading? Or could it be that the world has always been callous and cruel like this? Kuldip Singh's passing away, and our apathetic reaction, made us all feel that we had also lost our innocence.

So in 2007, when all Kuldip's friends of the 1970s met for a nostalgic reunion again on 206 B T Road, we decided that we should do something to perpetuate his memory and achievements. One of us, Bimal Roy, was then the Dean of Studies and that made things easier. We created a fund that would help bright and needy ISI students - especially in computer science - complete their education and go on to become brilliant young individuals serving their profession and nation.

We should do more. ISI didn't just give us outstanding values and education. It also gave us dear friends like Kuldip Singh. It is now time to hand over the baton to the next generation.

ISIAA adds:

ISIAA had the honour of administering the **Kuldip Singh Memorial Fellowship** that was created by friends of Kuldip Singh in his memory in 2007.

Abhik Ghosh, the extremely bright but needy student, who was the recipient of the fellowship from 2007 to 2012, did complete justice to the faith reposed in his academic abilities, and performed exceptionally well all through his B.Stat. and M.Stat. years, effortlessly earning quite a few laurels, including the P.C. Mahalanobis Prize.



After successfully completing the M.Stat. programme in 2012, he cleared the entrance examination for the Ph.D. programme in Statistics of ISI, and began working part-time as a graduate student with Prof. Ayanendranath Basu at ISI, Kolkata, while being employed full-time as a Statistician at IMRB International. He completed his Ph.D. work this year and has submitted his thesis for evaluation.

Abhik bagged the first prize in the 2013 ISI Jan Tinbergen Awards, given by the International Statistical Institute every year. The Jan Tinbergen Awards are named after the famous Dutch econometrician, and are for best papers by young statisticians from developing countries.

MY MEMORIES AND SOME THOUGHTS

ANIRBAN GUPTA



SQC & OR Diploma (1967)

Worked with SQC Unit till 1972, and subsequently with Rourkela Steel Plant, Mishra Dhatu Nigam Ltd, Metal Box India, Gillette India and made my bread and butter applying what I learnt in ISI. Also had a stint with Kobe Steel Ltd of Japan.

After completing my engineering degree in 1967, I joined the PG Diploma Course in SQC & OR. A senior member of my family was puzzled when I informed him that I was going to join this course. He said, and I still remember, that he had no idea how this knowledge could be of help in a country where there is no quality and I also remember that I could not reply. When I look back, I feel that was a profound question.

In my engineering course, I had learnt basic principles related to strength of materials, Heat Engines, Metallurgical Engineering and I remember that all the relations were perfect. For any voltage the value of current was unique. In all the graphs, line passed through the points.

When I joined ISI, the first thing I realised was that variation, however undesirable, is inevitable and therefore a part of life. And if, in real life, we observe that there is no variation, we were told to “doubt it”. We also learnt that variables, though they vary, they display unique patterns. I remember the ISI emblem, the banyan tree with innumerable aerial roots below the tree, surrounded by the motto, UNITY IN DIVERSITY. How appropriate!!

I remember many arguments where both are right, like when someone argues that trains are less crowded than buses and another vehemently argues that trains are more crowded. It is possible that the view of one is based on his experience during morning hours, while the other learnt from his experience during the noon time.

In engineering, one of the subjects was assay. We had to find the iron content in an ore sample or to determine the tungsten content in an alloy steel. After completing the tests, we used to discuss the results and many times the discussion turned out to be serious arguments as to who was right, due to the variation in the results, and no one knew the true value except the teacher. One group accepted the results of one of the students who normally got values close to the true value, while there was one boy who preferred the average value.

When I was working in a steel plant, the Blast Furnace Chief always grumbled that variation was too high while the Mines would claim that it was much less than what it should be. This argument went on forever and was an excuse against which nobody had any answer in those days. Someone even talked about piece-to-piece variation.

In real life, there is so much confusion about the sample. I remember an interesting dialogue between a patient and a doctor in one of the hospitals where I was admitted for a minor surgery. The patient I am talking about was admitted for an appendectomy. He was quite afraid of the surgery and, in all anxiety, asked the doctor about his chances of survival. The doctor told him that he should not worry at all

because the surgery was very simple and he was 99% sure that he would be fine. To this the patient asked has anyone died so far. The doctor was annoyed and reiterated that it was a simple surgery, and no one has died. The patient was very upset with this reply and said he would have been comfortable if one would have died. Then he would be in the league of the other 99 happy survivors.

This kind of talk is not rare. There is so much of confusion with numbers and sometime the clever and the smart people willingly play with figures.

Confidence is good only to the extent of 95% or 99%. If you need 100% confidence from someone about achieving something, your subordinate will commit the minimum. In fact, in corporate offices, if the boss does not want his subordinate to pursue any particular project or make any change, he asks his subordinate whether he is 100% sure. Normally the answer is no and boss very subtly scuttles the project. I personally faced this problem and found that confidence of 95% is, for all practical purposes, near-certainty and enough guarantee to my boss.

We learnt very well a few things about samples, namely,

- when randomly collected, a very small number of observations can give lots of information. So get out of the phobia of data collection.
- one should clearly know why the data is being collected, and to ensure before start of the data collection that those questions will be answered.
- How much of data?
 - Again depends on the purpose and purpose can vary-
 - To find out if two things are similar
 - between two groups is not more than a specified value
 - Difference Estimate variation or mean
 - How much has a great bearing with the variation in the basic observations

In real life the rule is, plunge into the reality, enter the situation and just start observing and gathering data. This will do much more good. No data collection plan is possible from the comfortable offices, one has got to be in the field just to see and feel.

There are some intelligent ways of roughly estimating things. I read that Professor Enrico Fermi (Nuclear Physicist) used to make estimates in the most unusual way. After the blasting of the atomic bomb, while everyone else was measuring various characteristics, Prof. Fermi took a handful of sand in his hand and slowly let the sand fall, watched the angle and estimated the energy released. I request young people to read these stories. (Details are available on the internet. Read *Classic Fermi Questions*.)

As a teacher, Fermi used to challenge his students with problems that, at first glance, seemed impossible to solve. One such problem was that of estimating the number of piano tuners in Chicago given only the population of the city. When the class returned a blank stare at their esteemed professor, he would proceed along these lines:

1. From the almanac, we know that Chicago has a population of about 3 million people.
2. Now, assume that an average family contains four members so that the number of families in Chicago must be about 750,000.
3. If one in five families owns a piano, there will be 150,000 pianos in Chicago.
4. If the average piano tuner
 - a. serviced four pianos every day of the week for five days
 - b. rested on weekends, and
 - c. had a two week vacation during the summer,

then in one year (52 weeks) he would service 1,000 pianos. $150,000 / (4 \times 5 \times 50) = 150$, so that there must be about 150 piano tuners in Chicago.

This method does not guarantee correct results; but it does establish a first estimate which might be off by no more than a factor of 2 or 3--certainly well within a factor of, say, 10. We know, for example, that we should not expect 15 piano tuners, or 1,500 piano tuners. (A factor-of-10 error, by the way, is referred to as being "within cosmological accuracy." Cosmologists are a somewhat different breed from physicists, evidently!!!)

Horse-pulled trams were introduced on British Roads around 1860 and slowly became popular. Problems with horsecars included the fact that any given animal could only work so many hours on a given day, had to be housed, groomed, fed and cared for day in and day out, and produced prodigious amounts of manure, which the streetcar company was charged with storing and then disposing of. The Government forecast the number of horses that will be used on the road in 1925 and how the manure would be collected, stored and disposed of. A very detailed engineering project was made. Incidentally, the last horse tram was seen in 1905. This is the tragedy of forecasting. For such long-range forecasting, there are many methods like Delphi (Technological forecasting). Focus is purely on descriptive logic.

We have also seen Taguchi and his methods. With great ease, he brought some of the concepts of physics like signal, noise and S/N ratio into the picture and showed that the concepts work.

Therefore, I feel that it may not be such a bad idea to be a little unorthodox as a statistician, and to score a six with a helicopter shot!!!

Just think about it!!!

I SAW THEM ALL AT ISI

GAURISANKAR RAYCHAUDHURI



B. Stat. 1960-64 (the first batch)

Did some research work on water resources and developed a unique medium range forecast technique for monsoon rainfall quantum. Has written a book on J.B.S. Haldane; now engaged in writing on Acharya Brajendra Nath Seal.

gsraychaudhuri@yahoo.co.in

R.A. Fisher

"Where is Rao?" murmured Sir R.A. Fisher. I looked around to find to whom the question was directed. Seeing none nearby, I guessed I was the target. It was one afternoon in early 1962, and the venue was the third floor corridor of the main building, now called the R.A. Fisher Bhavan named after the great man himself. I was at the Notice Board of RTS (Research & Training School, now abolished) opposite the lift/staircase. (There were, and still are, many Raos at ISI, but I immediately guessed whom he had meant). Sir Fisher had come from C.R. Rao's room, it seemed. I knew that Dr. Rao (C.R. Rao was called so in those days) had been a student of Professor Fisher at Cambridge University. A long and narrow Tea/Coffee Room, beyond Room No. 3.0, was a favourite meeting place for our teachers. Hoping to find Dr. Rao there, I led Sir Fisher by holding his arm (Fisher had poor eye-sight and wore thick lenses), opened the door, peeped into the room and, finding Dr. Rao there, I helped the grand old man enter the room and join the party.

I had another fortunate encounter with Sir Fisher earlier. That was in late 1960 or early 1961 (degree courses at ISI started in mid-August, 1960). There was a picturesque big long tank with its eastern tip somewhere near the site of the present Kolmogorov Bhaban (with the passage of time, the tank is now reduced to a shabby pond on its western end). The tank was bordered by 'supari' (betel-nut /areca-nut) trees all around and was visited by a lot of water birds like crane and kingfisher. Silvery ripples on the water surface added to the beauty of the scenery. Having a poetic mind, I frequented the site. It was lunch time one day. Hostellers had gone to take their lunch at the hostel canteen. I was a day scholar, so I had my refreshment from the ISI canteen (on the north-west side of the main building housed under an asbestos roof). To pass the rest of the lunch break, I positioned myself near the eastern bank of the tank and was absorbed in its beauty in no time. Suddenly I felt someone place a hand on my left shoulder. I turned my head. To my great surprise, I found Sir Fisher by my side. "What are you doing here?" "Seeing", I replied. Sir Fisher proceeded to continue his afternoon stroll.

I remember that once Sir R.A. Fisher had, in a speech, compared ISI with MIT (the Massachusetts Institute of Technology), indicating variety and high quality of research in these two seats of learning, but also pointing to the smaller size of ISI.

[Ronald Aylmer Fisher, FRS, was a statistician, evolutionary biologist, mathematician, geneticist and eugenicist. He *was the greatest statistician of his time, perhaps of all time. He, along with J.B.S. Haldane and Sewall Wright laid the mathematical foundations of evolutionary theory.*

In the 1st Convocation of ISI held on 12 February 1962, Professor R.A. Fisher was awarded Honorary degree of Doctor of Science (the other recipient, Academician A.N. Kolmogorov, was absent). He died on 29 July the same year. Fisher, a friend of P.C. Mahalanobis, visited ISI eight times in all, his first visit being in 1937. He always stayed with the Mahalanobis family at 'Amrapali' after 1941 (Amrapali could not be made ready for living before Rabindranath died in 1941, something the Mahalanobis couple lamented throughout their lives), sometimes for a few months together. It is interesting to note that a large block of the historic building now named after Sir R.A. Fisher, was formally opened by Sir Fisher himself in 1951 on the 20th anniversary of the Institute (Construction work started in 1950, and was completed probably in 1952).]

A.N. Kolmogorov

A special Convocation of ISI was held on 28 April 1962 to confer Honorary degree of Doctor of Science on Academician A.N. Kolmogorov (Andrei Nikolayevich Kolmogorov). He had missed the 1st Convocation of ISI in February 1962 due to health reasons. His physical condition did not permit him to take a flight from Moscow. He had to take a cargo vessel for his voyage to India.

On his arrival, he stayed for about two weeks at ISI, Kolkata and took part in seminars and discussions at RTS (Research and Training School of ISI). I first saw Professor Kolmogorov in corridor of the 3rd floor of the main building. He was accompanied by a few Research Scholars of ISI. On seeing him face to face, I said to myself: He is a 'rishi' of my imagination since boyhood. A 'Rishi' (sage/ seeker of truth) he really was.

I saw the Academician lecture in Room No. 3.0. In his talk, he would write something on the Blackboard and in no time one bright research scholar, K.R. Parthasarathy would assist him with elaborate calculations. Within two months, ISI deputed Parthasarathy to USSR (Moscow University, where Kolmogorov was working) for one year for higher study in advanced probability.

A swimming club in the hostel was inaugurated by Professor D. Basu (then Dean of Studies at RTS) in the presence of Professors A.N. Kolmogorov and J.B.S. Haldane (he had left ISI earlier, but returned after requests from students, whom he genuinely loved all through his life). The three professors and several students then took to the water. Professor Haldane was in shorts and Professor Kolmogorov was in a minimal swimming costume.

Accompanied by Professor C.R. Rao, Head of the Division of Research and Training and five other members of the research staff of ISI, Kolmogorov left Kolkata by the Howrah-Puri Express train after the special Convocation (on 28 April) to visit several places in India, including Madras, Bangalore, Waltair (now Vizag or Visakhapatnam) before boarding a ship at Cochin to return home.

[Academician A.N. Kolmogorov (1903-1987) is best known for his work on Probability theory, Topology, Intuitionistic logic, Turbulence studies, Classical mechanics and Mathematical Analysis. He gained reputation for his wide-ranging erudition. While an undergraduate student, he published his first research paper on landholding practices in ancient times. In 1922, Kolmogorov gained international recognition for constructing a Fourier series that diverges almost everywhere. His pioneering work on Probability theory was published (in German) in 1931. His book (in German), published from Berlin in 1933, laid the modern axiomatic foundations of probability theory and established his reputation as the world's leading expert

in this field. The book was, later on, translated into English as 'Foundations of the Theory of Probability'. He earned many laurels in life.]

S.N. Bose

Professor S.N. Bose was a scientist of rare quality, but always very simple and unassuming. He was better known as Satyen Bose. We in the 1960's saw him as the Vice-President of ISI and found him at all important academic gatherings in ISI, like the inauguration of degree courses (16 August 1960), the first Convocation in 1962, lectures by S. Chandrasekhar, A.N. Kolmogorov, etc. On one occasion, with Professor S.N. Bose in the chair, Dr. Rao (C.R. Rao) praised Professor Bose, saying that he reigned over the universe, as Boson particles, named after him outnumbered other fundamental particles in the universe (I do not remember the occasion for which the meeting was arranged, but Professor Mahalanobis was conspicuously absent; possibly, it was the special convocation held for conferring an Honorary D. Sc. Degree on Academician A.N. Kolmogorov). In the same meeting, Dr. Rao, as the Head of the RTS (Research and Training School), spoke at length on various topics. He was extravagant in his speech and also mentioned that during the expedition in Godavari valley for fossils of dinosaurs, the curry was hot, whereupon Professor Bose intervened and said, "Rao, make it short".

I remember Professor S. Chandrasekhar (yet to be a Nobel Laureate) delivering his lecture on 'Statistical Theory of Turbulence' (September, 1961) before an august gathering (mostly unknown to me, perhaps ISI guests from elsewhere) in room no. 3.0. I watched the entire episode from outside the lecture hall. Professor Bose, seated in the front row, was apparently drowsing (it is generally believed that he had been, in fact, in an intense concentration). At the end of the lecture he summed it up at length and thanked the speaker.

During the liberation struggle of Bangladesh (separation of East Pakistan from administration of West Pakistan), it was reported in the media that the soldiers of the Indian army who were involved in the warfare with the freedom fighters, were dying in thousands. This news perturbed Professor Bose. He felt that the mishap was due to the unfamiliarity of the servicemen with the terrain. He studied maps of pertinent areas in the ISI library got them copied and sent them to the Ministry of Defence of India (I was told this story by an Ex-Chief Librarian of ISI).

[A paper by a young unknown Indian named S.N. Bose, published in the world's leading Journal, 'Zeitschrift fur Physik' ('Journal for Physics') in the year 1924 shook the world of Physics. This outstanding research paper 'Plancks Gesetz und Lichtquantenhypothese' ('Planck's Law and Light Quantum Hypothesis') removed the discrepancy embedded in Planck's Law. Earlier, Max Planck himself and stalwarts like Albert Einstein, Peter Debye, Wolfgang Pauli (all the four are Nobel Laureates) and others had tried for years, but failed to rectify the defect.

S.N. Bose was the rarest of rare talents. He could visualize a picture/situation with crystal clarity, when other stalwarts could only have a blurred view, or groped in the dark. First, he conceived of the whole problem and then started afresh in his novel way to arrive at the desired result.

Bose's paper laid the foundation of Quantum Statistics. Based on Bose's work, at least six Nobel Prizes were awarded, but not to Bose. It is now said that Bose should have received the Nobel Prize twice - for Bose Statistics and for Bose-Einstein condensate.]

J.B.S. Haldane

J.B.S. Haldane (John Burdon Sanderson Haldane) was a great scientist and a great teacher. I have not come across a teacher who loved, cared for and respected his students more than he did. At Indian Statistical Institute he was in the faculty (as a Research Professor) and taught us, the 1st batch B. Stat. students, General Science and Biology. General Science included all branches of science, because he knew them all, and taught non-stop for 100 minutes (2 consecutive periods of 50 minutes each) on Mondays (first two periods). Biology on Thursdays (?) included Zoology and Botany - theoretical and practical. It was scheduled for the whole day, sometimes continuing beyond class hours till 7 or 8 pm (in such cases, there were invariably arrangements for refreshments with 'singara'/'samosa', sweetmeat and tea). He allowed students to borrow books from his personal library adjoining the Biometry Unit on the second floor of the main building (now called the R.A. Fisher Bhavan) on a particular day of the week. I had thus borrowed and read several popular science books by Professor Haldane. One day, I returned a book and asked Mr. Sastri, the Library-in-charge, to give me a particular book. He asked me to seek permission from Professor Haldane in this regard. I found him standing between two racks and going through a book. I told him that I wanted the book 'Probable Worlds'. He rectified me by saying 'Possible Worlds' and then added: "Oh! I wrote it long ago". Then he gave me the book immediately.

In the entire ISI campus, 'Professor' meant Professor P.C. Mahalanobis, the founder Director. I noticed an exception to this rule on the 2nd floor of the main building, where the Biometry Unit was situated. There 'Professor' meant Professor Haldane.

I always tried to keep myself close to Professor Haldane on our educational visits to the Zoological Garden, Botanical Garden, the Indian Museum, or to some aluminium factory, or Agricultural Fair, in and around Kolkata. It was always a delight and educative to hear him speak. I have a good stock of anecdotes about him, but I must refrain from telling them now (I have narrated them elsewhere). Professor Haldane could produce devastating jokes. Once his colleague and wife Dr. Helen Spurway complained that on the third floor of the ISI main building, the room adjoining Room no. 3.0 is numbered 3.2, and not 3.1. To this, Professor Haldane replied, "That is higher mathematics, you won't understand."

[J.B.S. Haldane was an outstanding scientist and a polymath. It is said that he was the greatest biologist of the twentieth century. Some hold that his contribution to biological sciences is next only to Charles Darwin. His versatility and scholarship was phenomenal. He made valuable contributions to various branches of science, notably in Genetics, Physiology, Bio-chemistry, Biometry and Statistics. Some of his scientific works will live on for long years.

He did not have any degree in science. That's why he jokingly called himself 'a bogus scientist'. Yet he taught Physiology at Oxford University, Biochemistry at Cambridge University, Genetics and Biometry at London University. He had produced more than 400 significant research papers in different science subjects, some of them being outstanding.

J.B.S. Haldane was far ahead of his time. He was the first to postulate the idea of a 'Test Tube Baby', which is so common now-a-days. However, at that time (1923 A.D.) it was laughed at as fantasy and unfeasible. He coined the term 'Clone' that we know today. He boarded the plane at London airport on 25 July, 1957 and left England for good to settle permanently in India. He had joined ISI in August, 1957. He assumed Indian citizenship in April, 1961. He left ISI at the end of the academic session, in May, 1961. and was appointed the Professor-in-charge of a new research unit in Genetics and Biometry of the CSIR by the Government of India He resigned after some three months, as no office room or equipment was provided to him for work, claiming: "I cannot do research work under such conditions, and if I continued

to draw my salary I should be cheating the tax payers". Mr. Biju Patnaik, the then Chief Minister of Orissa (then Orissa) approached Professor Haldane and promised all facilities to set up and run a Genetics and Biometry Laboratory in his state. As a result, Professor Haldane joined the Orissa University of Agriculture and Technology (OUAT) and started a Genetics and Biometry Laboratory under OUAT at Bhubaneswar, the newly formed capital of Orissa (now, Odisha). Professor Haldane was gratified to find that all promises made to him were kept.

All sorts of biological observations were taken day and night and noted for creating data bank. Brisk activities continued for some time. Then colon cancer was diagnosed and operated upon, but the disease had already spread to an alarming stage. Doctors warned him that his days were numbered. He re-scheduled his plans and programmes. "It was a race between life and death", he said, and added that "I should like to work to score a few points". On the 1st of December, 1964 he breathed his last at the age of 72. He had already made arrangements for donation of his organs for the welfare of humanity, creating a glowing example in the Indian scenario (Haldane was only the second person in Indian history to donate his body, after one teacher from Maharashtra, Dadhichi, but that was allegorical, or at best, in pre-historic period).

He had received some rare honours from various distinguished Societies in different countries. As Fellows of Royal Society, his father J.S. Haldane and he are probably the only Father-Son duo in the history of the Society. J.B.S. Haldane played a vital role in opening up new vistas in the development of biological sciences in India.

Professor Haldane never missed an opportunity to promote paleontological research. In 1953, he was invited by Indian National Science Academy (then National Institute of Sciences of India) for his suggestions on evolutionary studies in India. He emphasized that foremost priority should be given to palaeontology, and urged the study of fossil record. He pointed out specific areas in India which possess satisfactory Jurassic strata (213 - 144 million years in the past from today), unlike Europe and North America where such satisfactory strata are lacking, and so he hoped that "an Indian palaeontologist would find the first complete skeleton of a Jurassic mammal". Within a couple of decades, the prophecy of this great scientist came true. A geologist (Dr. P. M. Datta), from the Geological Survey of India (GSI) discovered the complete skeleton of a Jurassic mammal, which was named *Kotatherium haldanei* honouring J. B. S. Haldane. I strongly suspect that Professor Haldane was instrumental in creating the Geological Studies Unit at ISI in 1957 for initiating the study of rocks, emphasizing paleontological research.]

I would like to draw the attention of Statistician friends to a joint paper by S.D. Jayakar and J.B.S. Haldane titled 'A new test of significance in sampling from finite populations, with application to human inbreeding', published in the JOURNAL OF GENETICS, Vol. 58 No. 3, December 1963, pp. 402 - 412. The authors claim that "this method is, in some cases, more accurate than Student's method for testing the significance of a difference between means". After the publication of this paper, Haldane became critically ill and died in a year; Jayakar also died early. May be, the paper went largely unnoticed by statisticians, perhaps due to its apparently obscure source. I request these friends to go through the paper, assess its worth or otherwise, and share their critical views with the rest of the statistical community (In case of difficulty in procuring the paper, I am willing to share a soft/hard copy).

D. Basu

Dr. D. Basu (Debabrata Basu) was an excellent teacher. I had the honour and good fortune of being taught by him. In 1960, when the degree courses started at ISI, Dr. D. Basu was the Dean. He taught us probability. The novelty of his teaching was remarkable. He would reduce any complex problem to a

simple coin-tossing or a dice-rolling problem. I found this to be the outcome of a rare quality and wisdom.

We were also taught Set theory for the first time then (Calcutta University taught Set theory at the post-graduate level, and not any lower level at that time. I learnt this through personal interaction with a PG student of C.U. who was also a Member of ISI Library). At such a time Dr. Basu told us in our class that Set theory should be taught at the class VI or class VII level. After more than 50 years now, when I see it being taught in lower levels in school, I salute the great visionary.

Dr. Basu would also teach willing pupils the game of Contract Bridge in the hostel. He trained a lot of students, who spread all over the world in the course of time. Many of them still play at the national or international level. The most successful among his students was of course, K.K. Roy (Kamal Roy). For many years, Kamal represented India (also led India) in international competitions. Like his guru Dr. Basu, he also trained a good number of reputed Bridge players. At one point of time, Kamal was among the best 10 players of the world. This is a matter of national pride. Alas, we lost this wonderful friend (Kamal) a few years ago.

I revere this extraordinary teacher and wish someone who knew him more closely will write in greater detail about him.

P.K. De

Professor Mahalanobis maintained that Statistics was a key technology. To make the B. Stat. programme at par with B.E. and M.B.B.S. programmes, it was originally designed as a 4-year professional course and students had to study a variety of subjects to get first-hand knowledge, in order to become competent professional statisticians (this probably continued till Professor Mahalanobis' death in 1972, or for a few years more; thereafter the programme was pruned to a 3-year one with fewer subjects).

So Chemistry too was a subject of study in the B. Stat. curriculum. Initially, there was only one teacher in the Chemistry Department, Dr. P.K. De (Pran Krishna De). He was an old man. He taught us about bonds, valency, structures involving carbon and hydrogen atoms; saponification value to find the efficacy of a particular brand of soap (Dr. De revealed that we pay the highest price for the worst quality of soap, because body soaps have the least saponification value, while washing soaps have the highest value). We had to find pH (the negative logarithm of hydrogen ion concentration) values for liquids to test their acidity or alkalinity or neutrality; we also made microscopic study of a sugar solution to determine the left- or right- orientation, and so on.

One day Professor Haldane praised Dr. De, for his excellent teaching and added that he had read his paper in the Royal Society. I met Dr. De at the first opportunity and told him what Professor Haldane had said of him. Dr. De felt shy but, on insistence, confirmed the Royal Society matter. Professor Shyamal Gupta joined the Chemistry Department after some time. He was doing his Ph. D. work on soil chemistry under the supervision of Dr. De and also taught us physical chemistry.

In Chemistry practical classes, I always used to be late in completing the experiments. As a rule, I used to be the only student in the lab at the end. Dr. De was very kind and sympathetic with me. He would always support and allow me to continue my work. In such solitude, Dr. De would always open his mind, tell me anecdotes and also occasionally give me advice. "For the poor, the only means of protection from winter nights, the '*kantha*' or the rag, always falls short to cover both chest and the legs", he would tell me. He once told me that the best research work is done in youth, when both the body and mind are strong.

Dr. De was well-acquainted with Professor Satyen Bose. He would occasionally pay visits to Professor Bose's place. On seeing him, Professor Bose would be glad and shout: "*Ore Pran esechhe, or janyo misti aan, ar aamar janyo muri*" ("Pran has come; bring sweets for him and 'muri' for me").

Dr. P.K. De retired from ISI on 31 March, 1966. At that time he had been conducting experiments at the Chinsurah farm (state-owned) on the assimilation of nitrogen by rice from ammonium sulphate.

I remember with reverence Professor De as being a good-hearted scholar.

[Dr. P.K. De did his Ph. D. at London University. He did pioneering work with blue-green algae for boosting up production of paddy (Blue-green algae are also known as cyanobacteria). Cyanobacteria have the property of nitrogen-fixing. When used as a fertilizer it increases production of paddy.

Dr. De had joined the Dacca University and taught organic chemistry there. Afterwards, he took position as the Principal of State College of Agriculture, near Kolkata. This agricultural college ultimately gave way to an agricultural university after a few morphological transformations, and is now known as Bidhan Chandra Krishi Viswavidyalaya). At various points of time, Dr. De was the Principal of Rampurhat College, Birbhum and had also taught chemistry at Surendranath College or Bangabasi College at Kolkata.]

Alex Comfort

A pioneer gerontologist (Gerontology is the science of longevity), Prof. Alex Comfort first visited ISI in 1961-62 (Duration: 22 December, 1961 - 14 February, 1962) and taught a few classes in biology to B. Stat. students. Usually he wore short-length T-shirts of deep mono-colour (like blue, green or red). He was very loving and caring and could mix with students very easily. His second visit to ISI was made some 20 years later. This good hearted British biologist is very vivid in my memory for his conspicuously-coloured shirts and for long personal conversations.

I would like to quote a few lines from his own article 'TWENTY YEARS' that appeared in the 'GOLDEN JUBILEE SOUVENIR' of the ISI Alumni Association: "Many of the projects which we discussed at the paper stage in 1962 - the bio-anthropology and human genetics work in particular - are now in active progress". (Dr. Partha Pratim Majumder, a student and a faculty member of ISI has made us proud by his outstanding works in Human Genetics. He is the recipient of many awards and medals, including the prestigious Millennium Medal of the Indian Science Congress Association in 2000 and the TWAS Biology Prize in 2009, instituted by the Academy of Sciences for the Developing World, Italy. He served on the Board of Directors of the International Genetic Epidemiology Society, and was the founding Chair of the ELSI committee of IGES. He is a Member of the Human Genome Organisation. His major scientific interests and contributions have been in the fields of human population genetics and genetics of complex human disorders. Dr. Majumder is at present the Director of the National Institute of Bio-Medical Genomics at Kalyani, near Kolkata.)

"In PCM's [PCM = Prasanta Chandra Mahalanobis] time ISI had a period as an international university full of distinguished foreign academics. PCM entertained them like a rajah"; "I regard ISI as my second university and PCM as the author of a second and very fruitful education - which has supplied me with ideas ever since"; "India did me more good than I did to India - but that was perhaps what PCM intended"; "I am sure ISI has not stopped educating foreigners"; "The (ISI) compound's bird life has suffered, . . . though I still see, kingfishers, green flycatchers, oriole, parrots, bulbul, babbler and coppersmith. I miss my old friend the koel, with whom I had long dialogues to the surprise of the durwan ("That man talks to birds!")"; "The old hard-tube computer, which used as much current as a small town, is long gone"; "History has to continue on the shoulders of the past"; "PCM got the Institute off, with

great foresight, on the right track"; "The biometry carries on the subject as my old teacher J.B.S. Haldane propounded it."; "I took PCM's advice and crossed India by a slow train to put myself in the right frame of mind"; "I owe PCM and the Institute a debt I can certainly never repay".

Sources of Information:

My memory

INDIAN STATISTICAL INSTITUTE ALUMNI ASSOCIATION (1981): GOLDEN JUBILEE SOUVENIR, Kolkata.

Indian Statistical Institute (1992): J. B. S. HALDANE: A TRIBUTE, Kolkata.

SAMVADADHVAM (House Journal of ISI, a yearly publication, now extinct)

Annual Reports of ISI

Wikipedia, and other relevant websites.

Fisher Box, Joan (1978): R. A. Fisher - The Life of a Scientist, John Wiley & Sons, New York.

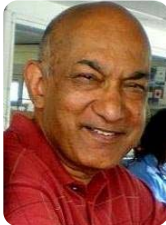
Basu, Jayanta (2010): Satyendranath Basu ek ananya bahumukhi prativa, Bangiya Bijnan Parishad, Kolkata.

Datta, Mahadeb (2003): Bose Sankhyayan, Bangiya Bijnan Parishad, Kolkata.

Raychaudhuri, G. S. (2006): J. B. S. Haldane (in Bengali), Paschim Banga Bijnan-Mancha, Kolkata.

SOME MEMORIES OF PROFESSOR E.M. PAUL

SAJAL LAHIRI



B.Stat (1971); M.Stat. (1972)

Worked briefly at the Planning Commission after completing his ISI Ph.D. before moving to Essex as a lecturer in economics. After a 26-year long love affair with his university at Essex, that included holding the department chair, election to the University Council, and a brief detour to the Royal Court of Justice, he has made Southern Illinois his new home since 2002.

I joined the B. Stat. programme in 1967 and left ISI in 1976 after submitting my PhD (in Economics). The B. Stat programme used to be a four-year one, and at the end students joined M. Stat. second year. Those who did their undergraduate degree elsewhere were admitted in the first year of M. Stat.. I am saying all this as many alumni who graduated in the 1980s and later are not aware of this.

Professor E. M. Paul did not teach me until I was in B4 (B. Stat. fourth year). We used to hear lots of stories about his 'eccentricities' from our seniors from the beginning and so the three-year wait to be taught by him was a long one. But when it came, it was well worth the wait. The exact material that he taught us is not relevant as the area I work on these days is a million miles away from the topics he taught, but, I think, I learnt to think rigorously from him. He was one of my most favourite professors and many of my classmates say the same. I was generally a backbencher, but not in his lectures.

In this short piece, I shall focus on some stories about him. A few are my own experiences, but others heard from friends and seniors. Most are true, but some like the one that he named his children Epsilon and Delta, are clearly not. As the late Somesh da (Professor Somesh Chandra Bagchi) used to say, "All stories are complex, with some real part and some imaginary." (Somesh da was an M2 student when I was in B1).

My first glimpse of his 'eccentricity' came when he spent the very first lecture introducing abbreviations; lots of them filling a long blackboard. I can only recall a few: wkt for 'we know that', wspt for 'we shall prove that', nsc for 'necessary and sufficient condition'. Then the subsequent lectures were full of those short-hand notations. Come to think of it, this is actually not 'eccentricity' at all, but excellent use of time. The value for epsilon to him those days was 10^{-81} . He did explain the significance of the number 81, but I cannot recall it (maximum number of known something in the universe).

By the time I joined ISI, I had stopped growing vertically. I did not grow horizontally much before that and during my nine-year stay at ISI. I was almost six feet tall and very skinny, as some will recall. Because of that I looked much taller than what I actually was, and was stopped by EMP several times in the corridors on the 3rd floor of the old RTS building (those days there only two buildings: RTS building and Geology Building). "How tall are you?" he would ask each time. I would reply, "Six feet". He would say, "Good". Later it dawned on me that he possibly felt threatened by my height; would he cease to be the tallest person on campus? Much later when I was living in the UK and was visiting ISI for a day, I travelled sitting next to him in the ISI Bus from 203 BT Road to South Calcutta and talked about so many things. I was an epsilon distance away from asking him the reason for that repeated question.

One day he came to our class with a newspaper under his arm; it was that day's "The Statesman". He asked whether we had read that newspaper. Some of us answered, "Yes". He immediately corrected us and said, "No, you have read a newspaper that is isomorphic to this one." How can one forget the concept of isomorphism after that? On a similar vein, one day someone saw EMP running down the stairs and rushing into room 3.0 in the RTS building, with all the students watching from the doorway. Moments later EMP emerged out of 3.0, went up the stairs and this time slowly walked down into 3.0. Apparently, he was giving a demonstration on the speed of convergence of a sequence.

When I was a student at ISI, the library used to be on the 4th floor of the old RTS building. Soon after, that is, after 1976, it moved to where it currently is. The emptied space created biddings from different units, one of them being from the Stat-Math Unit. EMP was the Professor-in-Charge of the Stat-Math Unit then. Somesh da and R.V. Ramamoorthy (now a Professor at the Michigan State University) were asked to prepare the Stat-Math bid. Another unit made a bid and at a crucial meeting of all the bidders with the Director, one gentleman from that unit tried to be technical and mentioned "Area Principle" of allocating space. Legend has it that EMP jumped up, stood to his full height, looked down and in his characteristic way asked, "Sir, when you say "area" do you mean the Riemann integral or the Lebesgue integral?" The rest is history.

EMP had a great sense of humour and I hope I have not written anything that would offend him. As I said, he was one of my most favourite professors at ISI and I have the utmost respect for him.

PASTIME STATISTICS

NIRMAL SENGUPTA



M. Stat. (1968).

Was an order supplier in the payroll of Research Institutes. Diverse engagements were like advising Commerce Ministry on Trade Facilitation, Chairing Working Group on Flood for the Twelfth Five Year Plan; accompanying FAO Technical Mission to South Africa; or serving as a consultant Expert to the Netherland Minister of Cooperation. He was Director, Madras Institute of Development Studies.

Bus conductors plying on B. T. Road would announce bus stops on the route as '... bazar', '... mor', '... road', 'bon ...' and then, with an intellectual twist, 'statistical'! Being a regular traveller I had to remember the numbers of all these buses. Statisticians do the same, I reasoned, though on a large scale. One day I got down at the "statistical" stop, passed the square pond, dwarf plants to enter the seven-storey house of large grey cards. I submitted my application for the M. Stat. programme, wrote the test and, to my surprise, received an interview call. Fast forward fifty years. Here I am with my old friends in a club. After a few pegs Tapan (Mukhopadhyay) found in me a potential contributor for the Souvenir and I gave him my thumbs-up. By next morning we were sober. However, words given at betting and booze tables must be honoured.

For graduation, I had opted for Chemistry honours because 'there is no future in mathematics'. However, halfway through college I realised that it was the wrong choice; Chemistry was 'dry', not a colour-composite as it had seemed in my schooldays. After some hesitation, I decided not to join any Masters' programme in Chemistry, and made peace with my furious family by declaring that this was to prepare for administrative services examinations. The offer from ISI, topped up with a stipend, was a decent but a temporary respite, in my view. I had no illusion. Somehow I may be able to mug up hundreds of 'bus numbers' for a few months, but soon they would find out and kick me out. However, ISI turned out to be a different place. I learnt Descriptive Statistics through dialogues, Probability through betting, and Vectors and Matrices as *Subhankar's* puzzles. Powers and roots that had harassed me for so long were decimated to zero by Numerical Mathematics. Lost hours at college, for playing bridge in common rooms, were made to pay rich dividends. Statistics, I felt, was more colourful than Chemistry. Friends like Somesh (Bagchi) made it even better with an ability to recreate mundane matters as colourful events.

I specialized through a department that has become, after some complex mutations, ERU and Planning Unit. B. Stat. friends had studied Economics just as they had studied Physics, Geology and many other subjects that used Statistics. However, as M. Stat. students, we had to study just one distinct subject -- Economics. I guess it was because, beginning with the Second Five-year Plan, ISI became central to national planning. From its Yojana Bhawan location, ISI felt like the cockpit of the nation, ready for Rostowian take-off. I fell for the glamour and opted for 'Econometrics and Planning'. What did I learn? Stephen Marglin, who had taught us General Equilibrium, told me later that we were good at Mathematics, but knew no Economics. Indeed, we were quick to internalize the Maths without realizing the social content of the theories. Still there were odds that hit hard. Minhas never mentioned his stylist production function. He was too busy with Daridranarayan's preference revelation. Then there was a frail young man who wasted a paper with such 'nonsense' as 'caste'. In those days, not many would accept

that neoclassical Economics need to formalise something like caste. Years later, this gentleman received a Nobel Prize for his work on 'Lemons'.

After finishing the M. Stat. programme, Ramesh Goel and I were absorbed by the Department in 'some' capacity. I say this because we were asked, inter alia, to write dissertations and were awarded diplomas for those. But apparently, ISI forgot this, as there is no mention of it in Alumni records. Still, those were valuable years for me. I could get hands-on experience of Social Accounting, Planning, processing and actual survey of NSS rounds, and making of large-scale econometric nonsense; the Calcutta unit was trying to build a parallel to The Brookings Quarterly SSRC model. There was an Econometric Conference at Patna. At the Patna Club, Professor Mani Mukherjee taught me the right way to sip beer and asked me to consider joining the A N Sinha Institute just to learn Economics. The then-Director of the ANS Institute was a renowned economist, earlier at IMF. I made the move and once again, faced rejection from my family. They knew that I had a lucrative job offer from campus recruitment. But I could not think of myself as selling tea for the rest of my life, even if it were through market research graphs and charts.

Thus began my life at Development Research Institutes, first at Patna, then Chennai, and finally in Mumbai. At Patna, caste was an omnipresent phenomenon; *daridranarayan* was a blatant reality. They featured in impact evaluation studies as well as in multivariates of Psychometry. By then the Ballygunge Science College based friends had brought out a popular science magazine, hoping to inject some good sense in youth in that era of annihilation politics. They requested me to write on the Indian Economy. Getting data for a simple book was easy, a suitable style was not so. I remembered from my pastime of reading books that used language, not charts and graphs, as visual aids for statistics. There were gems like Mark Twain's 'King Leopold's Soliloquy'. Besides, I had a collection of folk imageries from field visits in connection with sample surveys of various kinds. My book in Bengali, *Amader Desh - ekta Arthanitik Parichay* (Our Country - And Economic Introduction) was not a bad effort. It was actually read. My publisher informed me that the book was recommended as a rapid reader for standard eight.

Although we were specialising in Planning we never learnt a few relevant matters. The Third Five-Year Plan was a failure. We were studying M Stat. at Yojana Bhawan when it was a declared Plan Holiday. Earlier, the Administrative Reforms Commission had vehemently criticised the highly centralised approach of Indian planning. The failures paved the way for decentralisation. In 1972, the Bihar Planning Board was established. I joined as a Deputy Director and obtained the charge of Perspective Planning Division. But I left after a few months realising that this was hollow. (My family said, "Again?") I returned to the ANS Institute. In that detour however, I found my wife to-be.

In the mid-sixties of the previous century, there was a violent agitation in Telengana for a steel plant in the state. Thereafter, every other state dreamt of having its own steel plant. It could find support in the Growth Pole theory introduced by the French economist, François Perroux, for balanced development of war-ravaged Europe. However, distributing steel plants widely would also mean sacrificing locational advantage and cost efficiency. The Steel Ministry approached us to do an independent study and assess whether steel plants actually bring in regional development. Together with P.P. Ghosh, another ISI Alumnus, I made a working plan, for estimation of regional incomes of areas enclosed by concentric circles around a steel plant. I went to Kolkata to ask Professor Mani Mukherjee about its feasibility. He was supportive and gave us some suggestions. Better known as PeePee, Ghosh was my co-conspirator in every mischief we did at the ANS Institute. Here too, we made one in the study plan. We marked, not two, but three concentric circles, roughly corresponding to nation, state, and close neighbourhood. The result was shocking. It turned out that the state of location benefitted, but the immediate neighbourhood did not - the local '*daridranarayans*', the tribals were further impoverished. The study was never published, but made its mark. At the Planning Commission, Professor Sukhamoy Chakraborty was happy to

see cost efficiency criterion vindicated. All these lasted for a couple of months, and were then duly forgotten.

However, I was curious. For the next few years, whenever I had some free time I visited the Bokaro Steel Plant area. There I witnessed gradual development of a regional movement as a response to deprivation. Unlike other statehood movements in India here they had to resolve some complex internal problems, like tribes being a minority and absence of a common language. I wrote a series of articles in newspapers and journals describing how they were trying to solve these problems and establish a regional identity. I also edited a book titled *Fourth World Dynamics*. Those writings served their purpose, like forging unity of local adivasis and non-adivasis and making others outside Jharkhand more appreciative. Jharkhand state was accepted, and a few more similar units were formed without much fuss.

"That's an *ahar*", someone told me in one of my travels inside Bihar by jeep. Just an earthen embankment on ground, it was nothing impressive. *Ahars* and *pynes* were used for irrigation, I learnt. However, after being trained to notice them, I slowly realised that there were hundreds of *ahars* in Gaya district and around. They must be irrigating a lot, I thought. But there was no mention of it in the state irrigation statistics. There should be some data somewhere - I went through all possible data sources. Ultimately, I found some mention in Hunter's Statistical Account of Bengal, written in the 1870's. Hunter's databases were like, "At Howrah hat, brinjals sold at x *ana* y *pai* per *maund*". Hunter mentioned *ahar* and made some funny connection with famines. Intrigued, I went through the Famine Commission's and many related reports. I could not believe what I found. By all accounts Gaya district, the seat of *ahar-pyne* irrigation, was 'immune to famine' when the rest of India was being ravaged by repeated famines. In 1980, I published an article on this in *Indian Economic and Social History Review*, a Delhi School of Economics journal. It created a sensation. In 1985, I published a compilation of neglected traditional/indigenous irrigation systems all over India.

These studies had two kinds of reaction. They drew in administration, NGOs, World Bank and FAO with proposals and funds for development. They also initiated a series of environmental history studies resulting in a few Ph. D. theses. Anil Agarwal of Centre for Science and Environment was so excited that in the 1990's he took it up as CSE's next project. They received the Stockholm Water Prize for introducing a new paradigm of irrigation.

While still at ISI, I had begun my Ph.D. work. Quitting was easy since the Institute did not impose any residential requirement for its old students doing Ph.D. Now I thought of writing a thesis exploring how to develop *ahar-pyne* irrigation. A thesis on planning approved by ISI will contest the growing challenges of looking at those as museum pieces or as environmental finds. My old guide Ashok Rudra readily agreed to continue. We had to answer how so many farmers could work together without ditching one another and without any help from ignorant authority, and what kind of plan would sustain this cooperation while developing the system. I submitted the thesis in 1984. One of the examiners, apparently a 'progressive' person, did not like eulogising tradition. His suggestion was to revise it making it an economic history thesis. I was in a fix. I did not want a Ph.D. in Statistics by writing a thesis on economic history. Somesh suggested that I meet Ashok Maitra, the then Director of ISI, and explain the dilemma. Professor Maitra concurred and decided to send it to a third examiner. The new examiner assessed my thesis for its statistical quality and gave a positive report. I received my Ph. D. from ISI in 1987. The topic is now known as 'common property management' and 'self-organization'. In the 1980's, it had just started developing. Elinor Ostrom received Nobel Prize for this theory in 2009.

I stop here because further work in these areas ceased to be pastime. Now these are respectable economic topics. Common-property and self-organization theories earned Nobel Prize. Traditional irrigation systems are not seen as traditional anymore after being rehabilitated as modern techniques of

irrigation. Agreements on indigenous and traditional knowledge are being inked in WTO and WIPO (World Intellectual Property Organization). Indian Economic Association has a Trust for Research and Development. They asked me to compile a volume on valuable traditional/indigenous knowledge, which they published in 2007. Now I have other pastimes. And thank God, they have not become serious topics!

GONE ARE THOSE DAYS

ARUN KUMAR CHAUDHURI



B.Stat (1963-67); M.Stat. (SQC & OR specialization) (1968) ; Diploma in SQCOR (1969)

He was in ISI Bangalore from 1968-2008, where he was engaged in Training, Guiding, Research Projects on Quality Management, Improvement and sustenance. Currently he is the Director of ADAAP Process Solutions Pvt. Ltd. in Bangalore.

Days of colourful life could not be contained in the gilded cage.
They did not withstand the bondage
The bondage of smile and tears.
I'd have hoped they would learn the words of my life-song.
They flew away before they could utter all.
Creeping, they move around the broken cage
As if in some expectation, in my dream.
I wonder, if all my passions are in vain
Shadowy birds as if they are.
I wonder if anything flew across the sky.

Nearly five decades have passed since I parted ways with the Institute as a student in 1968. I clearly remember the first day I entered ISI as a student. Even though this acronym (ISI) has unpleasant associations now, we still prefer to call our Institute by this short form. It was full of chaos.... I had come to this Institution after completing my first undergraduate year at the St. Xavier's College, a well-organised college. And now, here I was, in this chaotic place, without anyone I knew. I cursed myself for choosing this option. I literally said to myself, "*Aasman se tapki, khajoor mein atki.*" Wow, what a building! It looked like a match box, seemed like it had been painted in the 15th century, and I was supposed to feel comfortable and well-adjusted here! Little did I know that, nearly 50 years after this moment, I would be requested to write about this, and on the top of it, to call it the "**Best days of my life**"!

Going back, I recall that my first few days were full of horror and the worst nightmares were brought on by a few seniors. Coming from a college where ragging was just time-pass, here I came face to face with the severity of ragging, having to answer embarrassing questions and running away whenever those few seniors were around. I remember how we used to find ways to escape from Nirmalendu Goswamy, Madan Lal Mittal and KS Narayanan. Though ragging was banned by Dr. Basu and Mr. B R Panesar, it was a huge craze amongst the seniors. It was their birthright to harass any newbie.

After a week or so, I did make lots of friends, really a lot, most of them seniors. The ones we were the most scared of now became the best of pals. Yes, my batch-mates too, Tapan, Basak, Subrata Dave, Kamlesh, Goel to name a few.

A few of these seniors became my idols in different spheres of activities: Partha da on football playing, Tamal da on acting, Arijit da on pure Bengali ADDA, Anil, Vinod and Alope da on smartness and how to impress others.

However, Kamal da was different and was my idol in the holistic sense. Talking to him, an introverted intellectual, attracted me because some of his not so sophisticated habits were also similar to my habits, like getting up late from sleep, lack of concern about physical appearance, etc. I may have matched him in all these aspects but certainly not in his brilliance in scholastic activities. He was a great bridge player, I followed him to different tournaments, specially the ones held in Bangalore. I remember his coming to Bangalore with his team, which included Dilip Ghosh and Nayan Acharya. I arranged for their accommodation in Shivaji Nagar. Kamal da stayed with us in our mess, of course. The Hyderabad team won that tournament.

I vividly remember an International tournament that took place in Bangalore in 1984. The Match was between India and Pakistan, and Kamal da's partner was Robi Nag. After about 8 rounds, the newspaper headlines were, "Robi Roy comes alive in Bangalore". Robi Roy of the then Calcutta, had been one of the best bridge players in India in yesteryears. In one of the breaks, Zia and Massoud of Pakistan came out and embraced Kamal da, saying, "You are the greatest" and "We hate to play against you". At their table, they had bid Six Spades and made the contract, and were beaming with joy. Kamal da and Robi Nag bid Six No-trumps and made the contract, and clinched the title. Like the other Kamal (Kamal Mukherjee), he too did not believe in calling directors and asking unnecessary questions of the opponents. Perhaps he has made other contributions to Bengal Bridge, but I am unaware of them. Needless to say, as a player he was great. The records speak for him.

It is these off-the-record incidents that make a lasting impression on novice players like us. Kamal da always placed sportsmanship and integrity above winning. I remember, the year I went on a trip to Europe and Kamal da presented me a beautiful tie, saying, "*ye langoti tumhare pas rakho.*" I still wear this tie on special occasions.

Kamal da was soft-spoken and I was a loud-mouth but we meshed very well and were in touch with each other till he left all of us. He lived a very quiet life, always in good spirits. Once in our famous Guha Shop adda, Dr. Ashok Maitra (AM), Somesh Bagchi, Kamal da and few others were sitting and discussing all aspects of life, ranging from Probability to Aparna Sen. Dr. Maitra asked about some mathematical proofs. Kamal da thought for some time, picked up Guha Babu's pencil, scribbled for some time on a torn old newspaper and said, "Here it is". AM took the paper from him and read it. He asked Kamal da, "Can I give this to JKG?" Kamal da simply shrugged and asked Guha babu, "One more tea please".

Once, some of us got stuck with a proof given by Dr. Sujit Kumar Mitra in Descriptive Statistics. We met Kamal da at the breakfast table and asked him to explain the same. He told us to come out, picked up a broken stone and wrote the proof on the sandy road, but he never wrote those clarifications on a sheet of paper. I tend to ditto what Morimoto said, "As everyone else, I appreciated his work and respected him for his not publishing junk papers."

We were amazed by his clear and profound thinking. He was modest, yet his logic and criticism were sharp and meaningful. It was always a delight to converse with him.

I consider myself lucky that I came to ISI, knew him in my life, and was fortunate enough to meet him along with Tapan just two weeks before his last journey.

ISI EDUCATION - A RETROSPECTIVE INTROSPECTION

SUBRATA CHAKRABORTY



B.Stat (1964-68); M.Stat. (SOC & OR specialization) (1969)

A former Director of Jaipuria Institute of Management, Lucknow, as well as Dean and Director in-charge of the Indian Institute of Management (IIM), Lucknow, he spent the first 5 years of his work life with SOC Unit, Bombay. For some 44 years, he has been engaged in teaching, research, training and consultancy activities, been a member of boards and academic committees of many other institutions/ organizations, has published extensively, a keynote speaker in many International and National Conferences, and has received prestigious international awards and commendations.

Preamble

I consider myself immensely fortunate to have had the opportunity of undergoing the B.Stat. and M.Stat. programs of the Indian Statistical Institute (ISI). For the record, I joined the B.Stat. program in the early sixties. No one had graduated out of this program till then; therefore, had no clue about the kind of future that may be awaiting us. Also, a majority in the society then had no idea of what 'Statistics' is; some even thought it to be just a spelling mistake of 'Statics'. That being the case, a natural question arises, "What made me/us join such a program at that time?" Reasons are likely to differ from person to person. However, there was one common element, as many of us, if not most, got attracted to it because of the prospect of being paid stipend, leaving everything else to the realm of imponderables or to hands of the Almighty.

Getting into ISI was an experience in itself. Unlike the present day, when people get tutored for many different types of admission tests, most of us perhaps sat for a psychometric test for the first time ever in our lives. I, for one, had no clue how I may have fared in the test, and felt redeemed only when I received a letter asking me to appear for an interview. On the appointed date and time I reported for interview, was promptly escorted to the cabin of a professor where I was asked assorted questions across disciplines, over a span of some 20 odd minutes. When permitted to leave by the particular professor, I felt relieved and began to proceed towards the stairway, to move out of the premises. I could barely take a couple of steps before the same person - donning pyjamas and a shirt - who had initially brought me to the cabin of the first professor, stopped me. He took me to the room of another professor, where another round went on for several minutes with different kinds of questions being asked. As I stepped out of the second professor's room, I was met by that same pyjama-man again who then took me to the room of a third professor. By the time I came out of this third round, my head was spinning severely and, in despair, I became resigned to my fate. This time I ask the pyjama-man where to go next. To my great relief, he said I could go home now. On my way home I was wondering if so much effort is expended to select mere students, what would have happened to the pyjama-wearing man - supposedly an employee - before he joined the institute. I kept guessing, but could not quite figure out then. In due course, I could decipher the lesson I learned: *Utmost commitment is necessary for progress.*

I was all set to join an engineering program when unexpectedly a letter arrived saying I have been selected for the B.Stat. program and shall be paid a monthly stipend of Rs. 60. Being from an ordinary middle-class family this meant much, and eventually clinched the deal in favor of ISI. Today Rs. 60 may seem paltry but in those days, it was enough for meeting all food-related expenses in the hostel. In an instant, I experienced a sense of having grown up and promptly decided that I would join the hostel even though I could have easily managed as a day scholar.

You may ask, "Why this preamble?" Is it because of nostalgia or necessity? Perhaps both. However, to me, it appeared necessary to give a feel of things then - the society, the institute, and my own mental frame.

The B.Stat. Program

Early days at ISI gave me a mixed feeling, seemingly a free environment without any apparent control, yet keeping the students on a tight rope through periodical examinations taking place every Monday morning. What is more, incentives were there for good performance, disincentives otherwise.

Administration was quick enough to declare prizes and fines soon after results of an examination were declared. As it generally happens, one set of people often bagged prize money while another landed up at the receiving end. Once, looking at the notice board, a topper gleefully said that he could now afford to get an additional pair of trousers made. Hearing that, a below-par performer lamented that he was going to lose his (pants). We all know -- irrespective of the side of the table we may have been -- the impact such subtle steps create on individual minds. Being used to writing only one set of examinations at the year-end till then, a majority of us hardly attached much importance to these examinations, until we were told that our year-end grade will take into account our performances in each of these examinations. *Lesson learned: Self - control is what makes life.*

I must say here that between the B.Stat. and M.Stat. programs, the greatest value addition was during B.Stat., which was a four-year program at that time and contained a bevy of courses drawn from Physical, Biological, and Social Sciences, apart from courses in Statistics, Mathematics, and Economics. Many friends used to crib about the inclusion of the science courses in our curriculum as they felt that these were unnecessary distractions, apart from adding to the workload. I did not mind their inclusion as such, but had no idea why those were there. It was much later, probably because of the kinds of situation I came to be exposed to in my work life, I began to appreciate the merits of the broad-based B.Stat. education that I had received at ISI, and the contribution that the various courses had made to shaping my mind. Looking back, I realize that education at ISI exposed us to (i) the two systems of reasoning - the associative system and the rule-based system; (ii) different knowledge generation methods such as hypothetico-deductive, inductive synthesis, and critical theoretic; and (iii) ways to rise above the etic/emic dilemma. Perhaps I need to explain what exactly I mean by these. But, before I do that, a brief introduction to what I did after graduation over these many years may be in order, as that may be of help to connect student-life exposures with work-life challenges.

Early Work Life

Soon after completion of my M.Stat. (with specialization in SQC & OR) I was asked to join the SQC Unit, Bombay (now known as SQC & OR Unit, Mumbai). There I was called upon to use my "so-called" knowledge to address problems faced by certain organizations assigned to me, by the head of the unit. As a technical officer, I was expected to know what needed to be done to resolve problems faced by these organizations and/or how to improve their performance. Thus, quite unwittingly, one came to be exposed to real-life challenges, after the comfort provided by the protective shelter of academic life. The organizations I came across were using different technologies, serving different customer groups, had

different types of constraints, and were faced with myriad other challenges, some of which were organization-specific. To fathom those was by no means an easy task, as these called for a different thought orientation. Secondly, it came to be realized that one size would not fit all; hence standard solution templates could not be used. Thirdly, and more importantly, the issue or the problem at hand needed to be identified and defined first; solutions were to be thought of later. This amounted to a journey in the reverse direction in comparison to what one was used to in the classrooms, where solutions are taught first. **Lesson drawn: *In life examination comes first, learning afterwards.*** It was important to reason out about various problem domains and search for a psychologically plausible device that can integrate understanding from associative networks as well as symbol-manipulating rules. Immediately, my mind went back to the psychology classes of Prof. Rhea S Das and the geology classes of Prof. Tapan Roychoudhuri. In those, I was exposed to associative thinking in which images - new and old - provided ideas and standards of comparison. I realized that concepts of association permitted a more abstract level of description, drawing inferences on the basis of similarity and contiguity. I began to appreciate the value of intuitive reasoning, an associative mechanism in which the associations are not between concepts but between components or attributes of concepts.

Realization dawned that rules stated in statistics textbooks are not about the domain itself, but about statistical concepts and procedures. Rules-based learning in statistics does not encode, for example, that wings are associated with flights. Rather, they encode how to, for example, conceptualize a correlation coefficient. This realization helped me to appreciate the statistics courses even more as I could figure out how being rigorous, systematic, and rule-based, these courses inculcated the ability to encode facts. **Lesson drawn: *Associations capture structure not by indicating how to calculate it but by representing it directly.***

What may be the source of such a realization in me? The combination of courses attended during the B.Stat. days, I believe. Why? It is there that the dual aspects of mind -- one which conforms to an analytic, sequential view and the other that conforms to an associationistic view -- were brought out quite effectively. Roughly, in an associative approach, systemic components reflect similarity and temporal structure whereas a rule based system is symbolic and its computations reflect rule structure.

An associative approach acts as an enabler to encode and process statistical regularities in an environment, and also helps in looking at frequencies and correlations amongst the various features of the world.

Middle Phase of Work Life

After about a five-year stint with the SQC Unit I moved over to NITIE, Mumbai, which happens to be the only national-level institute of its kind, as is ISI. However, there was a major difference as NITIE is an institution dealing with industrial engineering, and the students -- all at PG level -- came from various engineering streams and had different set of expectations. Their expectations were different even from a course on statistics and that had to be catered to. Among other things, NITIE used to conduct a large number of executive development programs for middle and senior management personnel. As luck would have it, a two-week program on "Stores and Inventory Control" came to be assigned to me within ten days of my joining NITIE, and I got designated as the program director for the said program. All I knew about this at that stage were some inventory control models taught to me by Prof. C R Prasad during my M.Stat. days. I could foresee that those could barely sustain me at most for two days, out of the total program duration of ten days. I did not know what to do for the remaining period, which was substantial. Further, I was told that models do not appeal to working executives as they look for more mature understanding and analysis covering all aspects of stores management. I could take help from my colleagues at NITIE, including the senior ones. But, being the program director, I was entrusted with

decisions regarding (i) topics to be included; (ii) class time to be spent on each; and (iii) how to present/deliver the topics to the participating executives.

I dug into the repertoire of knowledge acquired during B.Stat. days and came to recognize the value of inductive synthesis. In the major courses at ISI emphasis was on hypothetico-deduction, in which the journey is from theory to data; whereas, the situation at hand called for a journey from data to theory, composing reality from objective and subjective meanings as determined by the stakeholders in the setting. I began to wonder how I came to this realization. Yet again, it was on account of the array of courses I was exposed to in my B.Stat. days. My inner voice directed me to become a passionate participant and act as a facilitator of multi-voice construction, recalling the Indian Economics classes of Prof. Anil Chatterjee. *Lesson learned: reality exists as a holistic and meaning-bounded construction as opposed to being tangible and fragmental.*

This baptism in to the executive development program taught me that continuous cross-examination and rigorous scrutiny of data are important and the need is to have proper procedures for selecting, collecting and evaluating empirical data, as generalizations here are to be attempted through studying similarities. I decided to immediately visit a few industries around NITIE to get a first-hand feel of things. While on this, my mind went back to the Official Statistics course taught at Delhi in the fourth year of the B.Stat. programme. I soon realized that in addition to inductive synthesis one could make use of critical theoretic approaches in which knowledge is created and expressed in the form of pattern theories or working hypotheses or temporary time-and place-bound understanding. *Lesson learned: nature of knowledge in this is individual reconstruction coalescing around consensus.*

Later Part of Work Life

After serving NITIE for some 11 years I suddenly landed up in Lucknow, the capital of the Hindi heartland of India, when IIM Lucknow started its operations there. Having spent so many years at NITIE, I was reasonably sure of myself. However, IIM proved to be a different kettle of fish. Firstly, any graduate could join the IIM Post-Graduate Program in Management, bringing the best brains from different disciplines. An overwhelming percentage of students, being engineers -- coming from IITs and other reputed engineering colleges -- had excellent powers of comprehension, necessitating significantly higher quantum of inputs in every single session. Typically, what gets covered in a span of over a period of one full year in universities was getting covered here in a span of one trimester involving 30 hours of classroom inputs in each course. Proceedings were fast and needed much effort and intense preparation both by the faculty as well as the students. Secondly, when it came to executive education, the participants who were coming for training at IIM were formidably senior. Programs were also conducted for senior government officials of different services like the IAS, IPS, IFS, IES, IA&AS etc. These officials had very little patience for any theoretical inputs, as they wanted ideas and approaches that could directly help them in doing their jobs better. Overall, it was a puzzling experience to begin with, and we had very little support to fall back upon in the initial years at IIM Lucknow. Being a new institute, the library and the computer center did not have anything beyond the very basics at that stage. Also, as the institute was operating from rented premises, nothing much could be developed in the immediate future, as there was no space. It was then that I realized what constraints truly meant. Prior to this, I used to take those lightly, believing that it is simple, as one can start with a feasible solution and work towards reaching optimality. I came to recall the Dual Simplex Algorithm, which starts with a super-optimal solution and moves towards attaining feasibility. I began to apply my mind as to how this approach could be put to use and came to an astonishing realization. *Being resourceful is more useful than having resources, as the objective is to execute the best performance despite the constraints.*

End Note

One can go on and on, but neither the space will permit that, nor is it particularly necessary. In spite of all the odds if one could go on (I suppose that the same is true of all my friends), what really came handy are the insights gained at ISI. As for me, I benefitted immensely from the statistical insights, not so much from proofs of theorems, lemmas and corollaries. It is said that education is what remains after you have forgotten the specifics. I value what had remained with me, feel extremely proud of my alma mater and also of my beloved teachers.

At the draw of stumps, the readers may like to know who the mysterious pyjama man was. Well, old timers will know. He was our beloved Apurba da, Apurba Guha, who was a non-teaching staff member with the RTS (Research and Training School) at that time. He was truly Apurba (please consult Bangla dictionary to know the meaning of "Apurba") in many ways.

May our revered institution keep growing and shape many more minds and build lives. My humble salutations to thee!

STUDENTS OF ISI

P. BHIMASANKARAM



B.Stat. (Hons.) (1967) ; M.Stat. (Comp. Sc. specialization) (1968); Ph.D. (Statistics) (ISI, 1972)

Currently a Clinical Professor of Statistics (Area: Operations Management) in the Indian School of Business, Hyderabad, after professorship in ISI Kolkata and Hyderabad.

ISI is famous worldwide for its research contributions to various branches of arts, science and technology. What is perhaps not so well-known is that the students of ISI compare favorably with those of the best academic institutions on several parameters. Some are academically excellent, some are great human beings and often they are both. The senior students take on the roles of elder brothers and sisters when taking the responsibility of their juniors. Let me start with some examples of academic excellence.

I was teaching numerical analysis to B.Stat. first-year students. I taught Lagrange's interpolation formula and told the students that in the next class we would obtain a formula if the values of derivatives are also available at those arguments. When I entered the class-room in the next class and was about to start the lecture, one student raised his hand and said that he had an idea. I thought that he probably read it from one of the numerical analysis books (in which case it is good) or he would waste some time. Either way, I decided that it was nice to listen to him and I could correct him where he failed and take it up from there. So I called him to the board. He started with $n+1$ points. He kept the $n+1$ basis polynomials corresponding to the Lagrange's formula and extended them to a basis of vector space of polynomials of degree less than or equal to $2n+1$ in such a way that the latter polynomials are orthogonal to the former ones corresponding to Lagrange's formula and are also orthogonal among themselves. This helped him in computing the coefficients of the basis polynomials to finally yield the formula in a trivial manner. Further this gave a formula whereby one gets a correction factor to Lagrange's interpolating polynomial algebraically. I have not seen this anywhere even till date. In the first year of B. Stat., it is not very easy to see that polynomials of degree less than or equal to n form a vector space, let alone thinking about bringing in orthogonal polynomials for forming a suitable basis. That student is Debapriya Sengupta. I must also commend their Linear Algebra teacher, Professor Kripasindhu Sikdar.

While teaching Multivariate Analysis to first-year students of M.Stat., I used to divide the class into groups of two and give a research paper to each group. They had to study the paper and present to the class. In one group, two very good students, Venkataraman and Ananda Sen, were presenting the paper, 'Some characteristic and non-characteristic properties of Wishart Distribution' written by Professor Sujit Kumar Mitra. While the presentation was going on, one student raised his hand and said, "Sir". I did not want the flow to be disturbed and asked the student to wait till the presentation was complete. Three minutes later, the same student again said, "Sir". I was irritated and told him, "OK, I give you an opportunity. Your argument had better be good." He went to the board and made one simple observation and the proof of the main result followed immediately. I immediately went to him and hugged him. Professor Mitra is well-known for his elegant proofs. But here is a student who could do better. This student's name is Gopalakrishna. Professor Mitra was extremely happy to learn about it. He met this boy and congratulated him personally.

I was teaching Regression Analysis to M. Stat. first-year students (who had finished B.Stat.). In one session, I made a statement in connection with collinearity influential observations as was the state of knowledge at that time, which was at best a surmise: if the hat matrix diagonal is large, then the corresponding observation is collinearity influential but if the hat matrix diagonal is small, the corresponding observation may or may not be collinearity influential. I also mentioned that I was not happy with this statement. In the next class, one of the students came up with an inequality which established that if a hat matrix diagonal is small, it cannot be collinearity influential while large hat matrix diagonal of an observation may render it to be collinearity influential. The student's name is Anindya Roy.

I was teaching Linear Algebra to B.Stat. second-year students (in those days, Linear Algebra was taught in the second year of B.Stat.). I introduced the concepts of a field and a vector space over a field and proved a few basic results. At the end of the class on that day, two students came to me and asked what would happen if commutativity does not hold for multiplication in the field. The interesting part was, as the vector space material was being developed, both of them had checked which of the results would still go through without the assumption of commutativity mentioned above. All this in B.Stat. second year! These students are S. Ramakrishnan and Sukanta Majumdar.

While teaching a batch of B. Stat. third-year students, in one session I was explaining bubble sort to them. I caught a student napping. So I pulled him up and asked him how he would perform a sorting. He stood up, thought for a moment sleepily and started describing a method which works perfectly though it may not be very efficient. I have never seen this method anywhere till today. The student is Debashis Kushary.

When I used to teach linear models, in one of the introductory classes I would prove that a linear unbiased estimator is the Best Linear Unbiased Estimator of its expectation if and only if it is uncorrelated with every linear zero function. I did the same for one batch of students and told them that this is a very important result. At the end of about 60% of the course, one student exclaimed, "You said that the linear zero function result is a very important result, but to this day you hardly ever used it in later developments. How do you say that this is important?" This made me think deeply and what followed was the linear zero function approach to linear models which I developed jointly with Professor Debasis Sengupta. This later grew into a full-length text book written by Professors Debasis Sengupta and Jammalamadaka Srinivasa Rao (known to most of us as JS Rao).

These are but a few instances of many I have witnessed. Half of my research papers came from my teaching in ISI. In fact, I learnt more from my students than what they learned from me.

When I joined B. Stat. in 1963, it was the first time I ever came out of my district. My seniors called me for an interview with them one evening. They asked me some funny questions. One of them asked me how many girl-friends I had. I was actually counting with my fingers and they were shocked. I was naïve and at that time all I knew was: a girl-friend is a friend who is a girl. After a brief interview, one of them, Partha Sarathy Bhattacharjee, took me out to Guha da's teashop. There he told me that all the seniors and he in particular would be there to help me whenever I needed. Throughout my student days, he, in particular, and several other seniors took great care of me with respect to studies, health and games, especially Table Tennis.

This is probably around 1990. Severe ragging was going on in NIOH. A number of ISI students went to NIOH and threatened the ragging students of serious consequences if they continued the activity. It was stopped immediately.

Student community of ISI is unparalleled. Long live ISI student community!

THOSE DAYS OF YESTERYEARS

NABENDU PAL



B.Stat.(Hons.) (1984), M.Stat. (1986)

Ph.D. from University of Maryland Baltimore County (UMBC), July, 1989.
Currently, a professor in the Department of Mathematics, University of Louisiana at Lafayette, USA

Our periodical examination on *Statistical Models* is on the day after tomorrow, but I'm yet to go over some missing study materials, and I don't know which one of my closest buddies has my class-notes, but who cares hostel life is simply irresistible, and the night is still young at 1 a.m. So, after playing TT for another round, and chatting in the lounge for some more time, it is time to sleep. But wait, before hitting the bed around 3 a.m. the time is just perfect for some more mischief...

It was practically the Jurassic age - more than thirty years ago. There was no internet, and youngsters didn't fall in love with some one of the opposite sex over a mobile wrong number. The route of the dinosaur-like L-9 double-decker bus had not been truncated at that time and, for 50 paise one could travel from Bonhooghly to Golpark. As we often took the lumbering L-9 to Esplanade, pushing through the traffic jams due to the metro rail construction, I often wondered whether the buses really arrived at stops following a Poisson process...

Forget about any wi-fi 'hot-spot'; right across from the hostel gate on the other side of BT Road, and a few steps toward the Bonhooghly market, Kishore-da's tea shop used to be the most favourite hot-spot for all of us, that is, the 'ISI hostelites'. Over a 30-paise tea a lot of debates used to take place, and the topics ranged from Rodin's sculptures to Das Capital, from the latest movie release at Ananya to Indo-Pak cricket matches; and, the debates continued with, not 'googling' but ogling once in a while at passing girls of our age to and from the housing estate next to the tea-shop. That was the real life!

It was also the time of giant prehistoric mainframe computers, on account of which each one of us accumulated sufficient computer punch-cards (with 'JCL errors') in our hostel-rooms, for other mundane use. So I took some of those cards for a specific mischief. That 'fella' in room number 79 was the earliest riser in the hostel, followed by another goody-goody boy in room 91, followed by so and so.....Hence the 'fella' in room no. 79 gets a punch card under his door with a purported message from some of the 'Late-Latif' risers to wake them up at 5 a.m.; another punch card for the goody-goody boy in room no. 91 bearing a request to wake up some of my buddies with whom I had a shouting match till 3 a.m. You can imagine how the fun began early in the morning with a big commotion and angry outbursts.



Kishore da, as he is today

Back in 1981 when we joined ISI as B-I students we had very little clue about 203 BT Road and its inmates.

But very soon some wise B-II'ers warned us that there were a lot of 'crazy' souls around. And rumors swirled like multi-colored ice-creams about the lunacy of some of the highly esteemed research scholars whom we looked upon with part fear, part disdain and part loathing (because their stipend was much higher than ours). The "crazy stories" didn't spare some of our professors either. One such person was rumored to have gone lunatic ever since a ceiling fan fell on his head on a hot summer day. Some could be seen stepping slowly and incoherently under the thick canopy of *Amrapali* which reminded us of a 'Random Walk'. One weird research scholar never spoke to us, but always passed by us at a hurried speed and with a stern face, as if he has just lost a 'couple of his parameters' from his Gaussian behavior.

One of the seniors once pulled a prank on me during my first semester. It was pouring heavily outside, and hence I was confined to the second floor of the main library, trying to decipher a book on Vector Analysis. The senior politely came over from the next table and asked what the probability of rain outside was at that moment. I answered, "Why? Probability is one". The senior nodded, and countered, "Why not half?" I was stumped!!! What a dumb answer; it was raining heavily, so why one-half probability? Maybe he was right. Maybe he was talking to me in terms of quantum theory, who knows. ISI was full of such 'crazy' people.

Not spending enough time on our studies soon caught up with some of us, and hence a 'band of brothers' needed a thorough soul-searching to find out how to stem the rot and shore up the grades. A lot of cigarettes were sacrificed to fire up our passion to find the truth, some solid statistical evidence behind our declining academic performance. Therefore, we did justice to the subject of Statistics. It wasn't really easy to find out exactly how serious we were with our studies, and how much time we spent going over the class notes daily. So a comprehensive survey was conducted in order to assess our daily usage of time; to estimate how much time we were spending playing TT, reading newspapers, watching *Chitramala/ Chitrahaar* on DD, sleeping, eating, and what not. Then, after deducting all these estimated times from 24 hours we arrived at the bare truth - the estimated time spent on studies: a paltry 19 minutes per day!

For those of us who are indebted to ISI not only for our academic and career achievements, but also life's other valuable lessons, hostel life taught us (me, at least!) to be self-reliant and self-disciplined. It was indeed a baptism by fire. As I recall, my understanding was that, in ISI, you either shape up, or you get shipped out!

We surely enjoyed our ISI days to the fullest! Those excursions, the Night Olympics, the fests... Oh, where can I begin and where do I stop? One can write a *Mahabharata* on some of the hilarious love stories that captivated the whole campus for quite some time.

One of the saddest moments of my life came when I was about to leave the hostel after finishing my M.Stat. It was the summer of 1986. After packing my spartan belongings, and handing over the room key to the warden, I sat on the stepping stone to the pond in front of our hostel. It was a sombre evening; a cooler breeze slowly lowered the day-time high mercury. The splash of a ripe coconut into the pond from the surrounding grove punctured the silence. I craned my neck over the water-edge to catch a glimpse of some fish jostling for food in shallow water. I would miss those fish, and feeding them with puffed-rice. It was indeed a twilight moment in my life. The glimmer of the past five years was giving way to an uncertain future, and I was not sure when and how I would return to see my beloved Alma Mater again.

However, I did visit several times after 1986, and ISI never ceased to startle me from time to time. One incident that is etched permanently in my memory occurred many years later, when I was back in ISI

during a summer vacation. The Math-Stat Division (to which most of our teachers belonged) was still at its old location in the erstwhile RTS Building, and I went up to the fourth floor to look for some known faces. Times had certainly changed since the cost of a cup of tea in the canteen had gone up five-fold from what it was in 1986!

From one end of the Math-Stat Division floor I saw one of our professors, who had taught us multiple courses including Decision Theory as well as Measure Theory. Old professors are like old class- notes -- may be a little faded and dusty, but never erasable. They always bring old memories back when one flips through them. He was standing at the end of the hallway with a cup in his hand. He looked just the same, may be a bit more fragile due to age; with the same grandfather-type look. He was one of my favorites. Even though he wore a wrist-watch diligently, he used to lose track of time, and his classes lasted longer than the stipulated time until the next teacher knocked on the door impatiently. During our M-2 year, he arranged extra classes either at 9am or late in the afternoon when we were dog-tired. He taught us passionately, and sometimes with his nimble hand gestures he brought a Super-martingale from outside the window, or found a Sub-martingale under the table. Now here he was -- wearing the same grayish short-sleeve shirt and white trousers. He recognized me.

- "Sir, how are you?"
- "Fine, fine, and you?" He walked up to me hurriedly.

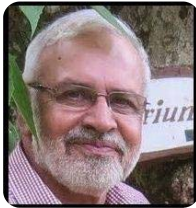
He looked at me with a smile, and then looked at the ceiling for a few seconds. He looked at his cup, and I noticed that it was empty. Yet he held the cup as if he was about to take a sip from it. Then suddenly he asked me, "Are you married?" I was baffled, but managed to respond, "Ummm... ya, I mean, yes..." He stared at me with a look of contempt. I didn't know what to say, and felt as if he has just handed me a back-paper. He looked at the ceiling again for several seconds in silence, then held the cup upside down, muttered, " t is equal to zero, t is equal to one, t is equal to two...", and started walking back to the tea club at the end of the hallway. He didn't talk to me anymore but I wondered -- did he just prove another theorem in Stochastic Processes?

Didn't I say that ISI had a good number of crazy souls?

FIRST IMPRESSIONS OF CALCUTTA

FIFTY YEARS AGO

ANIL MANCHANDA



M.Stat.(1969)

Specialized in SQC & OR at ISI, which was actually an excellent PG programme in Industrial Management. Was one of the promoters and Executive Vice President of Titan Watches Ltd. Later was Director-in-Charge of Suraj Jewellery Ltd. and Chief Executive of Uniworth International Ltd. Currently unemployed and bored.

I land at Howrah in 1962 at the ripe old age of fourteen and a half from small-town Punjab. As a student-select headed for the Indian Statistical Institute, I feel a foot taller than my five odd feet, having beaten the IIT system which refuses to consider me for admission till I reach sixteen.

The first thing you see coming out of the railway terminus is the Howrah Bridge. There is nothing like it in the rest of India. One has seen it in movies, but the reality is majestic. The sprawling and muddy Ganga underneath is a sharp contrast to the slim and young roaring rivers of the Punjab.

The next thing one notices is the clichéd teeming crowds. Sartorially striking for one whose experience of big town India is limited to Delhi and Bombay. A vast majority of men are *dhoti-kurta* clad. The *kurta* is called *punjabi*, I will never find out why. The women, and even teenage girls, are mostly clad in saris. No *salwar-kameez* or jeans to be seen. Later I find that there is a significant Anglo-Indian and anglophile population, and skirts and trouser-clad women are not uncommon in parts of the city.

Beggars, rarely seen in the Punjab, only occasionally in Delhi, more often in Bombay, abound here. Then comes the shock of seeing the dehumanising hand-pulled rickshaw, long banished from other states. I have seen them in films like *Do Bigha Zameen* but the reality is chilling. In my six odd years in Calcutta, I will never be able to bring myself to patronize one. Over the decades, many governments have avowed piously to ban the rickshaw and rehabilitate the pullers. No progress has been made so far.

Dr. B C Roy, who ruled Bengal for 14 years as a Congress chief minister has just died. He was a towering figure in Bengal politics and his demise would pave the way for decline of the Congress and rise of the Communist Party.

Though it will be 15 years before the Communists come to power, a young lawyer, Jyoti Basu, is already beginning to get noticed in trade union and industry circles. He will go on to become the Chief Minister and be denied by his party the opportunity to be the Prime Minister.

Cinema is the cheapest and most accessible form of entertainment. In three languages. Tickets are cheap and cinema houses aplenty. One unique feature of the old-style movie theatres, mostly showing English

films, is that before the show or during the interval one can step into the in-house bar and enjoy a glass of beer or stronger - found nowhere else in India. Also, young couples canoodling while enjoying a film is a far more frequent sight than anywhere else.

Satyajit Ray has already made his mark in the world of cinema, in Bengal and internationally. Elsewhere in India however, his work is little known except to members of film clubs. Hindi films, made in Bombay and surprisingly Madras, rule the roost even in Calcutta. Later, Bombay will happily absorb some Ray girls like Sharmila Tagore and Aparna Das Gupta. In 1962 Ray makes his first film with Bombay girl Waheeda Rehman in the lead role and suddenly people outside Bengal take notice. Many film makers claim to have been influenced by him. Some, like Ritwick Ghatak and Mrinal Sen, make excellent films but no one receives the adulation that Ray commands.

While many Bengali scientists, academicians and artists have phenomenal accomplishments to their credit and have acquired considerable fame, in popular Bong consciousness Ray is the sole eminence of recent vintage, who deserves to be right up there with Kobi Guru and Netaji. To this day fifty years on.

There is a **theatre** scene which I can only describe as passionate and vibrant. It is, however, in a state of perennial decline for want of patronage at the box office and behind the scenes.

The **sport** of choice and indeed passion is football. Almost everyone I meet has a favourite club team. Often a personal preference clashes with that of a sibling or spouse. This results in unending, loud, often ferocious and sometimes hilarious arguments. I don't have a team I can identify with but **Chuni Goswami** becomes my hero and, by transference, Mohun Bagan is my team. Chuni leads India to her first and last Asia Cup title. He plays cricket at Ranji Trophy level for Bengal. He captains the Mohun Bagan hockey team. He will go on to act as the hero in a movie, *Prothom Prem*. India has never seen a sports person like that.

The **music** scene in the city is unbelievable. Musical shows and events are aplenty. Each household harbours a budding poet, musician or singer or all three. A harmonium is a standard piece of household furniture. Music teachers, a poorly paid but highly regarded profession hardly seen elsewhere, are as often seen as tuition teachers elsewhere in India. And often end up romancing their female students, young or not.

One discovers **Park Street**, which is virtually a carryover from colonial days with its continental food restaurants, western bands, crooners and cabarets. There is even a smallish Moulin Rouge with a fake windmill on its fascia.

The **Barra Bazaar** with its Marwari dominance is a different city within a city. Here be the chaps who make money and create jobs. One of them, R D Bansal, funds Satyajit Ray films. The book shops and the coffee house of **College Street** are another fascinating world. The coffee house is a hotbed of student politics increasingly turning left.

The city is full of aesthetically pleasing buildings; most are poorly maintained. **Travelling** by buses and trams, at a few paise per trip, one can go all over town and not spend a rupee. Buses everywhere in India are overloaded, but Calcutta gives the word a new meaning. In contrast to other cities, however, Calcutta accords great respect to women commuters. A female can get into a bus, be offered a seat, travel in peace and come out of it untouched. In Delhi it would be impossible to emerge unmolested or at

least untouched.

The **Victoria Memorial** will never grow up to be a Taj Mahal, but it is a pleasant place to go to. Weekend trips to Dakshineswar, Bandel Church, Botanical Garden and the like are a refreshing change from routine.

To a young pair of eyes, romance seems to pervade the air. There is nothing more romantic than a walk along the **Lakes** or a slow **sail boat** across the Ganges with a light rain and setting sun. Young couples head everywhere and anywhere that provides some distance from prying family, friends, neighbours and relations, even if there is no real privacy. Siblings running into each other in unexpected spaces at awkward moments keep each other's secrets by unstated understanding.

Durga Puja is a phenomenal festival. The whole city is transformed. Much shopping for new clothes happens. *Puja pandas* come up everywhere in public spaces and roads, throwing an already chaotic traffic into a deeper mess. The goddess emerges gradually, taking shape from clay with artists working day and night to shape, paint, be-robe and be-jewel her. Somehow it all falls into place on time. Teenagers go a-hunting all over town looking for adventure and meetings with the opposite sex, both planned and per happenstance. Neighbourhood gangs of boys spring up to protect the local girls. Much food and sweets are made, bought, distributed and consumed. And everyone has a good time.

Indian Statistical Institute is where I will live and learn for the next six years. Founded by **P C Mahalanobis**, it is a nationally and internationally famed place of academic excellence.

It is an idyllic place to study and work, its vast campus an eclectic mix of the ancient and the modern. Fellow students are from all parts of India and a few are from other countries. One learns the ways of 'others'. One learns about local cuisine, music, film, theatre and so on. One learns the language. And *Addabaazi*.

The faculty harbours many tall intellects of a calibre, I later learn, rarely seen in India. It is the cradle for India's statistical back-bone, giving birth to the National Sample Survey and the Central Statistical Organisation. ISI also plays a large role in shaping the Planning Commission and later the National Informatics Centre.

ISI is where India's first mainframe computer will be installed and the very first post-graduate training programme in computer science will be started. In due course, there will be no academic or professional space on earth involving statistics which will remain untouched by ISI alumni.

After I left ISI I have gone back to Calcutta a few times. Sometimes for business but sometimes also 'just' to touch favourite places or to touch base with favourite people. Calcutta has changed but rather less than other cities of India.

As I write this I have very little idea of what Calcutta today is really like. Mamata di is the Chief Minister, her Trinamool having displaced the Leftists after thirty-five odd years. She promises to turn Calcutta into London of the east. And has started out by painting the town blue.

Joy Bangla!

BALDEV RAJ PANESAR ART GALLERY: AN INITIATIVE

NIBEDITA GANGULY



Deputy librarian, Indian Statistical Institute, Kolkata

Baldev Raj Panesar, an alumnus of the Indian Statistical Institute (ISI), was a statistician as well as a successful painter and artist. To the ISI fraternity he was known as 'Panesar saab' or 'Panesarji'. Born in Hoshiarpur in Punjab on 21 August 1927, Mr. Panesar came to Calcutta to study Statistics at ISI. He later joined ISI. He was close to Professor Prasanta Chandra Mahalanobis, the founder-Director of ISI. After his retirement from ISI, he became deeply involved with his creations of collage works, paintings and sketches. He was also a great humanitarian and devout person with great dedication towards humanity and art. Shakila, a girl from the downtrodden part of society and now a successful collage artist, is his creation and disciple. Panesar passed away on 6 January 2014.

Panesarji handed over few of his paintings to the ISI Alumni Association after an exhibition of his paintings held in the ground floor of the Library Building (now called SN Bose Bhavan) during the late 1990s. On March 22, 2011, he agreed to a proposal whereby ISI would acquire these works of art for a sum of five lakh rupees, but the proceeds of the sale would be donated to the Alumni Association on his behalf. These works were handed over to the Reprography and Photography Unit of ISI for safe-keeping.

The Reprography and Photography Unit, as the name indicates, is mainly involved with photographic work and reprographic production required by different units and divisions of ISI. It has also developed the *Digital Photo Archive* of the Indian Statistical Institute which contains a large number of memorable photos of ISI since its inception. This Unit, besides its routine work, also arranges several exhibitions, workshops and training on multimedia in ISI.

An art gallery was planned with these paintings, collage and sketches, twenty-three in number. After thorough cleaning of the paintings and framing of the collages, a display has been arranged in one room of PCM Memorial Museum and Archives to display these. *Baldev Raj Panesar Art Gallery* has finally taken shape in December 2014 as the Institute's homage to this great artist.

References

1. 'Panesar passes away'. The Telegraph, 7th January '14.
2. ISI Alumni Association Souvenir 2011
3. THE MASTER & HIS DISCIPL - works by B.R. Panesar & Shakila. www.cimaartindia.com/exhibition
4. B. R. Panesar - Passing into Oblivion, by Soumadeep Sen. March15, 2014. www.aainanagar.com.



ISI and NEHRU

Remembering Nehru
on his 125th birth
anniversary

PICTURES FROM
THE ISI PHOTO
ARCHIVES

Displayed in an exhibition
organized by the Repro-
Photo Unit of ISI





Jawaharlal Nehru at ISI (Pictures courtesy of Repro-Photo Unit, ISI)





Jawaharlal Nehru at ISI (Pictures courtesy of Repro-Photo Unit, ISI)



STUDENTS' FAREWELL (2014) ORGANIZED BY ISIAA



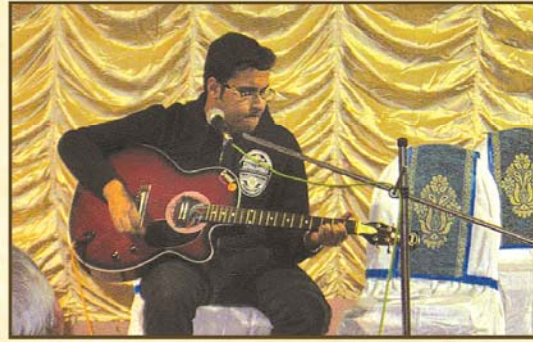
A group photograph of outgoing students at a farewell programme organized by the ISI Alumni Association on April 17, 2014, in the Platinum Jubilee Auditorium on the ISI Baranagar campus

Pictures courtesy of ISI Alumnus Pradipta Bandyopadhyay (B.Stat. (1982), M.Stat.(1984), Ph.D. (1988), currently Professor and Dean of Studies at ISI

Alumni Day organized by ISIAA on December 29, 2013



Soumendu Sundar Mukherjee (M.Stat. 2014) playing the mouth organ with alumnus Priyam Biswas accompanying him on the guitar



Sandipan Chattopadhyay (then M.Stat. 1st year) singing solo



Noted Rabindra Sangeet singer, Ms Pubali Debnath, regaling the gathering with a medley of songs by Rabindranath Tagore



Dipatavo Dutta (M.Stat. 2014) playing the Sarod with his batch-mate Ankur Lahiri on the Tabla



Rupak Banerjee and Soumya Shuvra Paria (both M.Stat. 2014) singing a duet



Musicians providing accompaniment to Ms Debnath



Alumni exchanging notes with each other!



Guests enjoying the sumptuous lunch in the ISI Canteen