



# Reminiscences to Research

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When we entered Presidency College in 1964 there was a feeling in the air, that the old order was on its way out and the new order was marching in. The teachers, some of them outstanding certainly belonged to the old order and the newly appointed ones were in the middle, neither old nor new!

We could hear the distant roar of revolution, "Down with fascists, rise and revolt the farmers." The bourgeoisie can go to hell. Come on proletariat, take over and rule. Quite a few of us fell to this romantic vision of ushering in the new world Bolshevik revolution or the Chinese revolution. Mao Ze Tung was our hero, Lenin was our Guru, nothing local mind you. We wanted leaders with proved effects, Subhas Chandra Bose won't fit the bill. We thought foolishly.

Devotion to excellence, mind you, was very much there and we adored our teachers, though, often laced with cruel or even bawdy jokes!

In the physics department Amal Kumar Roychowdhury is on the top of the list; he had one equation which goes by his name. Shyamal Kumar Sengupta was pure theatre, so I thought; each class was one piece in the drama. There were many others in that department who inspired us to no end.

Revolution was scheduled for the Indian Coffee House and the so called cricket field after dark!

All the courses we pursued had an air of romantic excellence. Let's take Shyamal Kumar Sengupta. The very first day he came in the college attired in *dhuti* and *punjabi* better known as *kurta* now!

Very softly he mentioned "I shall teach you thermodynamics." Raw and fresh from the school we had no idea what thermodynamics really meant, except it must be some subject which is very exotic. Well, exotic it was! In the blackboard he drew a straight line, then he slowly,

almost like an artist, drew an arrow! Professor Sengupta with his sense of theatre exclaimed "This is the arrow of time and the arrow of entropy".

The arrow in this case was pointed to the Baker Laboratory Verandah and beyond. In this case we thought to the sky and then of course ultimately to the Universe - it was exotic stuff! It took me a long time to realise that with time, the chaos of the world increases and then the entropy increases. It took even more time to realize that it was not so simple! Thermodynamics as taught by Shyamal Sengupta was inspiring.

Then there was Amal Kumar Roychowdhury. The so called Roychowdhury equation from Einstein's General Theory of Relativity was very fundamental. Roger Penrose, much later, told me that Stephan Hawking and he used Roychowdhury equation quite a bit; and in those days there was no computer, no telephone for long conversation. People read papers in journals, sometimes corresponded with the author. I appeared in research about those days; believe me, it was very exciting to correspond. We used to get requests in a card in the sixties for a 'real' copy of your paper.

So, Amal Babu soon turned into a legend for us. In fact, Amal Babu, entering a class room or for that matter Shyamal Babu entering a class room had a poignancy about it, every time it was a fresh act of a play, never fading, only getting more exciting!

We used to sneak in sometimes to the famous Tarak Sen's class in English Literature. It is not just the literature that attracted us, the best looking young women of the College drew us to his class.

It was a pleasure and education of the highest kind to listen to Tarak Sen- since I was quite ignorant about literature. I

learnt why Hamlet behaved the way he did- the profound gravity of human nature was made somewhat transparent by the lucid presentation of Tarak Sen. It was an almost emotional reaction. I also sensed how and why the students of humanities are smarter than us scientists. We scientists only participate in the discussions about Karl Marx, most of the time, but they read poetry. The act of seduction by sheer language through poetry, I thought, can never be realized by science and mathematics.

It is only when one went into the delicacy of research that the poetry of science became somewhat more clear. It was joy, sheer ecstasy when one tried to understand Paul Dirac's book "Principles of Quantum Mechanics" or the great beauty of Einstein's General Theory of Relativity.

Thus, Shelley, a poet for the scientists describes the "Cloud", "Like a child from the womb. Like a ghost from the tomb, I arise and unbuild it again". Poincare speaking in the conference "International symposium in honor of Robert R. Wilson" the builder of Fermi laboratory on April 27, 1979 said the following: "The scientist does not study nature because it is useful to do so. He studies it because he takes pleasure in it; and he takes pleasure in it because it is beautiful....."

It is only now, at this age one realizes that the two paths are different but the goal is the same, "Truth and Beauty".

When I was eighteen it got muddled in adolescent excitement and longing for the unknown.

And in Presidency there was the drama of cricket. Most classes stopped especially at the end of "one day" match. I thought much later that "one day" match was discovered in Presidency! I was what they call a "taru" batsman; luckily if I survived one over, I would go a long way. Attracting young ladies was another great and lofty motivation; not that one was very successful after the match.

Then there was the debating society; sometimes we used to invite distinguished outsiders to enrich the quality. There was some backbencher who used to tease and heckle the

speaker no end. The tough and the seasoned ones survived, the lesser ones just collapsed in confusion. It was a great experience, useful later in life in Cambridge.

### Epilogue:

Presidency College was not just an institution of learning, although learning was its first priority. In the huge array of very distinguished learners, so many names come up. Amartya Sen tops the list in my opinion. I cannot understand how and why the present generation cannot do so well with the great men and women of this college who have passed out have so much to inspire.

To be fair, I wrote my first research paper (!) in Bengali on "Aurora Borealis", hardly eighteen - it is not a question of pride but the inspiration from Roychowdhury equation.

Presidency is a collection of so many institutions, some of which I have already mentioned. It was a holistic educational system, interconnecting one with the other subjects. Without poetry there is no great science, without economics there couldn't have been great Amartya Sen. Without cricket there cannot be great debate - where is the strength of personality otherwise to fight the other? I said the "new order" in the beginning- new order does not throw out the old order at least in Presidency. Old order makes the new order more vital, more vibrant as I would like to think I was a child of the just started new order, although I didn't quite know what the new order had to offer.

Finally, have you ever seen Presidency at night?

Presidency every night is a new person, depending when you go and visit and at what time of the year (season). It becomes alive, with a shaft of light from some corner, shadows moving away gives it a sense of movement. Ghosts from long ago come alive and talk with each other in whispers along the corridor of time echoing their whispers. The rising voice of their oratory makes the stray dogs bark- sh!ghost. It is a delightfully magical experience- Presidency College never sleeps, in its slumber it dreams!

