

## From Physics to Economics

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I started at Presidency College in July 1969. The first feeling was one of self-congratulation at having got admission into Physics Honours, which had the reputation then of being the most difficult department to be admitted to. We did not have to take an admission test, unlike those who entered other departments like English and perhaps Economics. All admissions were on the basis of school-leaving marks. The then recently-retired Principal of the College, R.L. Sengupta, who had been departmental head in Physics before his elevation to the college administration, had reportedly expressed an opinion to the effect that students who had done the Indian School Certificate (or “Senior Cambridge” as it used to be known just before our time) were unfit for higher studies, especially in Physics and especially in Presidency. Being one of the guilty ones who had not come through the West Bengal Higher Secondary examination (apart from people like us who had done the ISC, there were also students who had done the pre-university examination), I was one of the minority in my class, which was full of other students who were referred to with bated breath by some of our compatriots: “x was first in the Higher Secondary examination, y was second in the Higher Secondary” and so on.

As far as I remember there were 35 men and one woman in our class, though I am not sure whether this was before those who wanted to study medicine left or after. One of the first lessons we learnt was that there were two kinds of classes, one in one’s honours field, where one was supposed to concentrate, and pass subjects, which some students regarded primarily as a means of annoying instructors. I remember one of our honours instructors, a young man who went by the abbreviated name of SS, starting his class by saying that since we were not going to learn any mathematics in pass class (because of the culture of neglecting pass subjects) and since we needed mathematics in physics, he was going to have to teach what we needed before he started teaching the content of his subject. Then followed a course in mathematics taught at frenetic pace. Those of us who had the ISC background had a couple of years of calculus and this helped in the first two weeks, before differential equations, vector analysis, calculus of variations and finally classical mechanics swept us away along with many of the others. There suddenly seemed to be great interest in exploring careers in medicine in our class! I remain immensely grateful to SS and to Presidency for putting us through this trial by fire, for it is true that these first few months constituted nearly all the mathematics I learnt at college.

I had joined the three-year degree course but it turned out this was a misnomer. The University of Calcutta was slipping towards complete chaos. Examinations were delayed, publication of the results

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was delayed even further. Many years later, I heard of how Ph.D theses were thrown on the floor of a dusty room in the university building, waiting (for years) to be sent out to external examiners. Trying to find out when examinations would to be held (from the Controller of Examinations) turned out to be impossible to achieve.

These were also the years of the Naxalite movement, romanticized by future generations of students and myth-makers in the newspapers. A number of committed revolutionaries had left the college to work in the villages of Medinipur. Within the college, the movement manifested itself by public beating of supporters of the Congress party on the main steps of the college and strictures passed on the length of sideburns by the revolutionary politburo in the canteen. (Apparently, the Chhatra Parishad in later years tried to regulate women's outfits in college, so may be the Naxalites were cultural trend-setters.) This is not to decry the dedication shown by individuals of all shades of opinion; they at least tried to engage seriously with issues larger than their own careers and the usual preoccupations of the college students. Also, Presidency was less violent than some other colleges. Student leaders in Jadavpur were attacked with iron rods by their political opponents and later, the Vice-Chancellor (of Jadavpur) was murdered by a Naxalite

There were also frequent strikes, which evidently annoyed the Physics Department head, S.N. Ghoshal, whose class was once interrupted by strikers from our own department. At least two faculty members, one in Economics (who was actually politically left-wing) and one in Chemistry, were harassed. One day there was an attack on a lab in which a lead-acid battery was thrown at a well-loved physics professor (who was fortunately not hurt). This was in our second year, and college closed sine die as a result. This was an interesting situation—we had to prepare for the examinations eventually, so not having classes was costly. On the other hand, the additional leisure time enabled some of us to read beyond our standard course fare (especially in the absence in Calcutta in those days of TV). I remember struggling through economics books, mainly to try to evaluate whether the Naxalite critique of society had any validity. I also read through Karl Popper's *Open Society and Logic of Scientific Discovery*, which together constituted a powerful antidote to the Naxalites and a crucial influence on my own development, though I think now that a simplistic interpretation of Popper is misleading. (I thought for a few weeks thereafter of doing a Master's in Philosophy of Science but decided against it because I was sure jobs in that field would be scarce.) I discovered Popper through a footnote in one of Bertrand Russell's books praising *The Open Society* for its perceptive criticism, I believe, of Aristotle! It was interesting to read the recent book *Wittgenstein's Poker* about the relationship between Russell, Wittgenstein and Popper. Russell apparently rarely mentioned Popper in his writings, so I had been lucky to have seen the footnote, though Popper spoke of Russell as the greatest philosopher since Kant.

My third year in college saw a new political dispensation take hold. The Naxalites were gone, as they were throughout the state. As far as I know, however, the Chhatra Parishad, which took over, discontinued the practice of beating up political opponents inside the college (though the police were certainly doing this in the state as a whole). This was possibly due to their leader, Neptune Srimal, being an avowed Gandhian who had been assaulted several times himself during the Naxalite days. Classes were held normally and other college activity resumed. I was interested myself in

debating and several debates were organized in the college, including a revival of “Past vs. Present”, in which the doyen of Calcutta debating, Sudhansu Dasgupta, spoke. (His usual sparring partner, N. Vishwanathan, was not a Presidency alumnus, otherwise it would have been fun to have had them on the same team for once.) The tradition of the Freshers’ Debate, where the audience drowned out what the speakers had to say unless they were especially persistent, however, continued through the years I was in college. The President of Bangladesh, who was an alumnus of the college, made a well-publicised visit. This was of course before the one-party system instituted by Sheikh Mujib and the awful events surrounding his ouster and the accession of his former colleague, Khondkar Mushtaq Ahmed, to power.

The three-year degree course finally ended in four years and I decided to leave physics and go for a MBA at the Indian Institute of Management, Calcutta. To some extent, I had got interested in economics and the social sciences during extra-curricular reading in college and felt that it was worth trying to see if there was a career in that field, with the back-up option of getting a job as an executive if I turned out to be no good at it. Two people I knew at Presidency had gone on to the IIM; I had thought of both as extremely sharp as well as very good company. One, Dipesh Chakraborty, had done his MBA and had started doing a Ph.D in history, while at IIM! In Presidency, he too had studied physics. It is probably tempting after the fact to say that he was clearly destined for great things, but, in fact, he was one of the most incisive and analytical people I had met in college. (I am not too clear now how I knew him, since he was about four years senior to us.) He is now, of course, an eminent historian. The second was Indrajit Gupta, who had in fact studied history at Presidency (and was also from my school). Indrajit, with whom I still keep in touch, is now a CEO of a software development company. If it was possible to predict Dipesh’s future career, Indrajit’s was a complete surprise. The fact that he was able to learn programming on his own, then strike out as an entrepreneur in a new field (and be a success at it ) speaks volumes for both his own abilities and the confidence that Presidency must have given some of us.

There are Presidencians almost everywhere in economics, whether at the University of Sydney or the University of Caen. It is interesting how even after all these years the profile of a typical economics graduate from Calcutta is an undergraduate degree from Presidency followed by a Master’s at the Indian Statistical Institute (another contribution of a Presidencian to India) or the Delhi School of Economics. It is a pity somehow very few potential economics Ph.D students go on to the University of Calcutta for a MA after Presidency—a pity for the University of Calcutta.

My own career progressed through the MBA to operations research to economics. I started doing game theory before it became the rage in economics (and after it had all disappeared from operations research). Presidency’s Economics Department is of course well known for its alumni. Like nearly every department in the college, it prepares its students to become contributors to their respective disciplines. I don’t have the figures with me, but the proportion of Presidency undergraduates who become academics or researchers must be among the highest for any undergraduate college anywhere in the world. Going into economics inevitably meant running into Presidency alumni. I revived my college friendship with Bhaskar Dutta, who has had a very successful career as an economist in Delhi and divides his time now between Delhi and Warwick in the U.K. Bhaskar has also become a co-

author of mine, as have various other Presidencian economists of different vintages (including a couple of my own students). Some people in his economics class (he was a year ahead of me) and the one a year ahead of him are influential advisors to the Indian central government on economic reforms.

From our physics undergraduate class, a large group is abroad, mostly still working in physics or applied physics. Some have professorships in India, including one who actually left the college during the enforced gap in our second year, as well as the sole woman in our class, who is now a well-established scientist. A group of those who went abroad in 1975 had planned a “Big Chill” moment; we were supposed to all meet in twenty years in the portico of Presidency College some time in August. This included a couple of friends who were actually not from Presidency but had become honorary Presidencians, as it were. It turned out when the twenty years were up that it was more convenient to meet in America rather than in the college. A meeting in the Poconos in Pennsylvania was arranged (this is a few hours from New York) and about half the original group attended. Unfortunately, I couldn’t go. Apart from me, one other person from our class did a MBA (at the IIM Ahmedabad), but unlike me, he chose to pursue a corporate career. Another classmate became a professor of finance, doing a Ph.D in that field actually from the university where I now teach, while several others work in research labs or as R&D managers. There are relatively few from our class in academic physics in US universities, reflecting perhaps the paucity of jobs in that field, though I know of some who are academic stars. Even though I left physics myself many years ago, I was quite pleased to be able to discuss certain problems with a structure common to physics and economics with another Presidencian physicist, three years our junior. The discussions didn’t end up in a joint paper, though I remain hopeful that one will materialize in the next few years. Her Presidency class has also produced several academic stars in physics.

There were three students in our physics class who had done the ISC examination. Of these one, Debi Prasad Mitra, tragically died young, of brain tumour. He visited the US several times for treatment but it proved of no avail.

I find in going through what I have written that I haven’t said much about our professors. Presidency College has always had its quota of legendary academic mentors like Taraknath Sen in English. I believe (though since my physics ended at the undergraduate stage I might be totally wrong) that the most eminent academic who taught us in those days was Amal Raychaudhury, who did seminal work in relativity. I was sorry to read in the newspapers last year that he had not survived the extremely hot Calcutta summer of 2005 and had passed away from heat stroke. I remember AKR also in the physics lab, where he would never get up from his chair. (There is a story in one of George Gamow’s books that theoretical physicists can cause instruments to malfunction just by looking at them—I believe the story was about Wolfgang Pauli—so AKR might have been trying to save our experiments!) However, he could give us perfectly precise directions on how to resolve our problems without having to get up from his chair.

There were several memorable individuals among the staff as well. Dilipda ran the college very efficiently (or so it seemed to us) and almost made us forget that there was a huge academic bureaucracy waiting to pounce on us as soon as we left the college. Ratikanto was in the Science Library and he

acted as the catalogue; he remembered the location of every book and whether it was available or checked out, sometimes even whom he had checked it out to. The official library catalogue was then hopelessly out of date and was being revised slowly, so Ratikanto was invaluable.

A couple of years ago I attended my first Banga Sammelan in the US, where there was a meeting of Presidency College alumni. There was a lot of discussion then about how they had collected a sizable amount of money to gift to the college, including some set aside to improve facilities for women. However, it turned out to be impossible to give this money to the college and it had to be returned! Apparently, we can't give money to our alma mater even if we want to, because of restrictions supposedly emanating from the state government (I have no means of verifying this assertion, but it seems plausible). This is very different from colleges and universities elsewhere. I am used to solicitations from Harvard, where I did my doctorate. Even Cambridge, where I only spent a sabbatical leave as an Overseas Fellow, sends me such solicitations. There should be some way to utilize the resource of Presidency alumni to help the college. I understand some professors in the college do ask Calcutta-based alumni to lecture to current students about their research and this is certainly a worthwhile way of using the resource, but surely there is no reason to turn away donations?

As I write in August 2006, there is talk that finally Presidency College will become autonomous. In fact, St. Xavier's College has already obtained this autonomy. This has been spoken about for so long that it is almost incredible that it will actually happen. In my third year, I remember a student-teacher committee had formulated a plan for autonomy and other changes, which probably never saw the light of day. (I think it was given to the Students' Union, which decided not to circulate it. I understand the college now has a non-political students' union, which would have been wonderful if it had happened in our days.)