

The Need for a National Nanotech Initiative

Sharad Bailur

There is as great a difference between miniaturizing something to microscopic proportions and making them to atomic scale as there is a difference between a thumbnail and a twenty storey tall building.

For the last couple of years we have been hearing increasingly strident utterances of India awakening and taking the world by the scruff of its neck with its mighty software muscle miraculously developed overnight so to speak; of India becoming a world power, of the 21st Century belonging to India. And yet after spending hundreds of crores over decades we are not able to develop a tank for the army. We have spent thousands of crores on the LCA and now we are told that we cannot expect it to go into combat duty for another 20 years. And, by then, it will be obsolete. Yet there is no doubting our software capabilities. These can be put to unprecedented use as we shall see.

Something Much More Important

This is what former President Clinton said in a speech at the California Institute of Technology on January 21, 2000: "My budget supports a major new National Nanotechnology Initiative, worth \$500 million... the ability to manipulate matter at the atomic and molecular level. Imagine the possibilities: materials with ten times the strength of steel and only a small fraction of the weight; shrinking all the information housed at the Library of Congress into a device the size of a sugar cube; detecting cancerous tumors when they are only a few cells in size. Some of our research goals may take 20 or more years to achieve, but that is precisely why there is an important role for the federal government."

What is needed is for us Indians to leapfrog into something similar. We should be concentrating on a Nanotech Initiative of our own.

What is Nanotechnology or Molecular Engineering?

The Nanotech Initiative of the US Government which began with the speech given by President Clinton in January of that year has resulted from a lot of work in the field that has gone before it. Now let us see what nanotechnology or molecular engineering is.

Ralph Merkle, Fellow at Zyvex Corporation says: "The central objective of molecular manufacturing is the design, modelling, and manufacture of systems

that can inexpensively fabricate most products that can be specified in molecular detail. This would include, for example, molecular logic elements connected in complex patterns to form molecular computers, molecular robotic arms or Stewart platforms (e.g., positional devices) able to position individual atoms or clusters of atoms under programmatic control (useful if we wish to make molecular computers and other molecular manufacturing systems), and a wide range of other molecular devices."

Inside

Point Counter Point

- ▶ **BMC – Governance is the Issue**
- ▶ **Cornucopia**
- ▶ **On Rajaji's 128th Birth Anniversary**
- ▶ **On John Stuart Mill**
- ▶ **Book Review**
- ▶ **Between Ourselves**
- ▶ **Many Voices**

“Nanotechnology...will let us make remarkably powerful molecular computers. It will let us make materials over fifty times lighter than steel or aluminium alloy but with the same strength. We’ll be able to make jets, rockets, cars or even chairs that, by today’s standards, would be remarkably light, strong, and inexpensive. Molecular surgical tools, guided by molecular computers and injected into the blood stream could find and destroy cancer cells or invading bacteria, unclog arteries, or provide oxygen when the circulation is impaired.

“Nanotechnology will replace our entire manufacturing base with a new, radically more precise, radically less expensive, and radically more flexible way of making products. The aim is not simply to replace today’s computer chip making plants, but also to replace the assembly lines for cars, televisions, telephones, books, surgical tools, missiles, bookcases, aeroplanes, tractors, and all the rest. The objective is a pervasive change in manufacturing, a change that will leave virtually no product untouched. *Economic progress and military readiness in the 21st Century will depend fundamentally on maintaining a competitive position in nanotechnology.*”

Building Upwards with Atoms

When we conventionally manufacture something it goes something like this: We chop down a tree and shape planks out of the chopped wood. We then shape the planks to make the table on which the computer, on which this article is being written, sits. A lot of energy gets used in the process and there is a lot of waste wood. If instead we had a machine that could “deconstruct” the table by analyzing what it is exactly made of down to its last atoms, store that information in digital form as software and then replicate the entire process with atoms of carbon, hydrogen (by splitting water vapour) and oxygen collected from the air, it should be possible, using just the atoms of the air, to make a table identical to the one made by the old process. There would be no difference between the old table and its nano-engineered clone. And we could make millions of them. Likewise it should be possible to make unlimited quantities of anything that we can think of today and much that will be possible that we have not even thought of. That includes unlimited quantities of gold, diamonds, food, clothing and shelter. A disaster like the Columbia burnout is impossible because the entire spaceship would be nano-engineered one atom at a time. There will be no weaknesses. Therefore no structural failures. Hence no burnouts.

“There is Plenty of Room at the Bottom”

It started with an innocuous speech given by Nobel Prize winning Physicist Richard Feynman in 1959 in which

he said, “There is plenty of room at the bottom”. In that speech he demonstrated that it was possible if the manipulation of single atoms could be brought about to miniaturize manufactured goods to such an extent that a motor the size of a pinhead could be manufactured. Sure enough within a year a student of his won the thousand dollar bet he had laid and made a motor the size of a pinhead. This did not really amount to nano-engineering as will be seen. And as it happened nobody took Feynman seriously. He was, as is well known, famous for his practical jokes.

There is as great a difference between miniaturizing something to microscopic proportions and making them to atomic scale as there is a difference between a thumbnail and a twenty storey tall building. By Nanotech or Molecular Engineering, what is meant is the manipulation of individual atoms to build from the bottom upwards to manufacture virtually anything that can be thought of and much that is today not even thought of.

Then came the invention of the Scanning Tunneling Microscope. With its help it became possible not just to see individual atoms at temperatures hundreds of degrees below freezing, it also became possible to manipulate them, to begin with, by just pushing them around on a flat surface. The first such crude manipulation was carried out by IBM the American multinational computer giant some ten years ago in an experiment in which it arranged atoms of xenon in a pattern that spelt “IBM”.

But When?

We already have available commercially in India, at your neighbourhood mall, smell-less refrigerators and socks and underwear that do not get dirty because of the silver nanoparticles embedded in them. Research is now on to devise motors with strands of DNA which will hitch a ride on bacteria and use their energy to travel through the blood stream and reach specific sites in the human body to destroy cancer cells, or clean out cholesterol caused plaque or deliver medicine with pinpoint accuracy. Among the latest developments is the invention of a “tweezer” made of buckminsterfullerene or buckytubes that can be used to manipulate individual atoms. Until now it was possible to merely push atoms around and place them approximately where one desired. Now the tweezers can lift individual atoms and place them with atomic precision. With this as a first crude step, it should be possible eventually to build anything up from its atomic structure upwards, from chairs and tables to a steaming plate of food complete with juicy pieces of meat and the heavenly aroma of spices. For the first time, vegetarians will have the pleasure of eating any kind of food since it will all be

atomically constructed and there will be no need to kill animals for it.

Implications

This possible future development has enormous implications for the world as we know it. Economics is a science of scarce means used to satisfy unlimited ends. Since the means to satisfy ends will become unlimited, Economics will have outlived its utility and will be given a hasty quietus. There will be no need of currency since everyone will be able to make anything – just anything – from gold to diamonds and as much of it as he likes. They will therefore have no value. All that will be needed will be to “deconstruct” into digital form to atomic level one piece of whatever you want to replicate from a jet plane to the finest Darjeeling tea and then let the software and the Assembler take over.

It will astoundingly give off more energy than it will consume in the manufacture. This means that there will be no shortage of electricity. Everything will be made just so. It will be possible to make things that have unbelievable durability unless they are willfully deconstructed. Since it will be made from the assembly of atoms upwards there will be no pollution in the manufacture. And no waste. In other words it will be possible to effectively banish hunger and discomfort of any kind, disease and even the need to do any kind of work for a living since the Assembler can be made to do it all. What happens to society when anything and everything is available to everybody and as much of it as he wishes? In a few decades it will have profound implications even on politics. What happens to all that oil sitting beneath the sands of Arabia, when there is no use for it any more?

And what happens to Chemistry and Biology? Science will be all Physics and Mathematics.

At first sight therefore it appears that this scientific development will be the holy grail of bringing heaven down to earth, an objective that has been the aim of all of mankind’s efforts for the last so many thousands of years since civilisation as we know it, began. Fantasy? Science fiction? Yes. I thought so too, at first. Till I went deeper into the available sources of information.

The Harm that Good Men Do

Molecular Engineering and nanotechnology, like any other scientific development is double edged and therefore has the enormous potential to also do harm. We have to be soberly aware that humans get pleasure in hurting other humans. We get even greater pleasure in

keeping other humans deprived. If humans can make computer viruses to destroy programmes all over the world just for kicks, they can create nanoscale machines that can be set free to tyrannise the rest of mankind in a grip far worse than any yet invented, made possible by the very nature of nanotechnology, also just for kicks. Or some other more “concerned citizen of this world”, could set free such nanomachines to destroy the world.

On a more practical and immediate note, among the nations of the world who, like the United States, have taken up the challenge of nanotechnology and molecular engineering are Japan, China, Taiwan, Singapore and the developed nations of Europe. India is very quickly catching up with the rest of the world and has the potential to become a software superpower in the near future. Since software is at the heart of Molecular Engineering it would seem that we will be missing an enormous opportunity to leapfrog into a nanotech future if we do not take up a national initiative on the lines taken up by the United States immediately. Perhaps this will be the last chance that India will ever have to redeem what it regards as its greatness in the comity of nations. It is time therefore that the Prime Minister announces in Parliament the taking up of such an initiative.

The first immediate step is for scientists in India to be aware of what Nanotechnology or Molecular Engineering is all about. And yet an Indian from near Delhi and his Chinese wife have invented a way to compress a computer chip to nano-size. It is time our IITs took molecular engineering seriously. Since it involves software for nano-machinery, cutting edge research by organizations like Infosys would come in useful.

For starters I would suggest that readers, especially interested scientists, should go to the website of the Foresight Institute (<http://www.foresight.org>). Another site that will give immense information and especially one that will dispel any remaining doubts about its feasibility is <http://www.zyvex.com>, while Japan has a website of immense value (<http://www.atip.org>) to specifically deal with Asian concerns.

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Put your hand on a hot stove for a minute,
and it seems like an hour. Sith with a
pretty girl for an hour, and it seems like a
minute. That's Relativity!

Albert Einstein

Point Counter Point

Ashok Karnik

Every issue has at least two sides. A wise man studies all sides before coming to a conclusion. This is an attempt to debate opposing viewpoints so that a considered opinion can be formed.

Reforming the Criminal Justice System

● There is some hope that the criminal justice system in the country is about to be changed for the better. Initially, there were CrPC amendments to make witnesses accountable for their changed statements (perjury, to be blunt), witness protection programme, (which may turn out to be much ado about nothing) and now there is a move for further amendments to ensure summary trials for minor offences, plea bargaining, compounding of offences etc. – all in order to speed up the justice delivery system. This is wonderful news for all concerned including the victims, the accused and the society in general.

We have been hearing about the revamp of the judicial system for the last several years. Many things are contemplated and nothing done in the end. Ram Jethmalani promised to streamline the system when he became the law minister, Arun Jaitley followed and it looked as if things were moving in the right direction but either the law minister got changed nor the government itself changed. We hope this time around neither will happen till at least the CrPC is amended. Even then, the legal fraternity could always come up with various professional objections to the contemplated changes, pointing out how the accused will suffer from not getting the best lawyers to defend them. It is an irony that civil society worries more about the accused than about the victims. The thinking is that a victim has already suffered and nothing much can be done about it but an accused should not be made to suffer if he is innocent. But can his guilt or innocence not be established reasonably quickly? Can those who engage the best lawyers be allowed to delay the process of law indefinitely and escape punishment forever? Is it not time to lay down a time frame for the court processes as there is now for filing charge-sheets?

Has Indian Diplomacy Come of Age?

● Indian diplomacy was in top gear in November 2006, what with the thaw in Indo-Pak relations and the visit of the Chinese President. It is a welcome sign that our relations with our neighbours are back on an even keel. It is a sign of maturity that we are prepared to talk with countries with whom we have serious disputes. Negotiations is the only way of resolving international disputes now. The days of gunboat diplomacy and even limited wars are a thing of the past. Nothing is achieved by killing each other. This is not to say that every country or its leadership is mature or wise enough to realise this fact of life. Adventurers will cause ripples from time to time but those are exceptions now and India's well-calibrated initiatives are to be lauded, even if there are no immediate results to show for the effort.

Diplomatic initiatives are fine and unobjectionable but the mindset displayed by both the Pakistanis and the Chinese before and during negotiations, causes one to wonder if they speak the same language as we do. The Pakistanis made sure that the Kashmir issue was not sidelined; they also underlined for the record that they are not sheltering terrorists and in fact asked us not to point fingers at Pakistan as a haven for terrorists. The Chinese made it clear that the territorial dispute remains unresolved and cannot to be swept under the carpet. The Indian mentality, on the other hand, is not to bring up inconvenient questions when our guests are around. Are we so steeped in civilisational niceties as not to offend our guests? On the contrary, the guests do not want to leave an impression that because of the present *bonhomie* they have given ground on thorny issues. Thus, there is no mistake that, despite the agreements and friendship talks, there is no concession made on any point of dispute. We have tested the bitter fruits of relying too much on 'Bhai Bhaism' in the past. This time around, let us be more pragmatic and accept that the disputes remain intact while we cooperate in non-controversial areas. One set of agreements does not mean agreement on everything. International relations are based on hardheaded bargaining and not *jejune* goody goodyness.

Readers are invited to send in their points of view on serious issues of the day to avkay@mtnl.net.in

BMC – Governance is *the* Issue

M. D. Kini

The Municipal elections in Mumbai will be held early next year. This is the first election after the Great Deluge which showed the inefficiency of the Municipal Administration and the resilience of the people of Mumbai to the world.

This is the right time for enlightened citizens to voice their concerns and ask for good governance. What do the citizens want or expect from their elected representatives? All that the citizens expect is just good governance – the civic amenities any civic administration is supposed to provide: adequate water supply, maintenance of roads network, smooth public transport, solid waste collection and disposal, properly staffed municipal schools and hospitals, open spaces – playing grounds and gardens.

BMC is the richest municipal corporation in India and its revenue rivals that of a state government. There is lack of sensitivity to the needs of the citizens both among the administration and corporators. Take the case of roads. The Bombay High Court had to appoint a Committee to oversee them. How can we expect good roads when BMC accepts contracts for road maintenance which are 25 percent below estimates? How can we expect adequate and regular water supply when there is a large leakage in and pilferage from the pipeline? People have been traveling in over-crowded buses and trains for the last few decades and there is no relief in sight. All that they promise is faster travel through fly-overs and faster train travel by metro-railway.

If we analyse the problems, we will find solutions.

Separation of Legislative and Administrative Powers

We elect our corporators to voice our needs and express our grievances. They are not trained either in administration or in technical details of power supply, waste management or road maintenance. It is in the interest of the citizens of the city if legislative affairs and administrative affairs are separated. The corporators should tell the administrators what the citizens require, and the administration should take care of the implementation. All the major civic services such as road building and maintenance, water supply, solid waste collection and disposal should be headed by an administrator / technocrat and they should be guided by a committee of five members consisting of three experts, one representative each from

the corporation and the Government of Maharashtra. They should award contracts for civic amenities. Elected representatives should be responsive to the needs of the people and administration should be responsible for implementation. This division is necessary for good governance.

Responsive Governance

To bring the administration nearer to the people, every ward officer and the corporator together should meet the people of the ward at least one day in a week so that they can hear the problems of the citizens and solve them immediately. Any major change in the ward should be discussed in the ward office/municipal school where all the political parties, NGOs and interested citizens should be invited. Every ward should have a Voters' Council where ward developments are discussed and where the corporators can give a report every year on their achievements – promises made and promises fulfilled.

Decentralize Business and Trade

It is a disgrace to the city that people have to spend long hours in travel to work everyday. This itself would reduce their efficiency. One solution to long travel is to create business districts all over Mumbai and Navi Mumbai. If BMC gives incentives to commercial establishments to go to the distant suburbs, travel to the central business districts in Fort area could be reduced. People should be able to work and stay nearby so that commuting is reduced.

Involve Citizens

Citizens, specially senior citizens, can give suggestions, and even mobilize funds to maintain and improve schools and hospitals. The many Trusts and Foundations can be persuaded to adopt some of them. Residents' Associations in every street can adopt sections of foot-paths and maintain them. Scouts and school children can be involved in cleanliness drives and in educating people on ecological issues.

Slums and Hawkers

They are huge problems. They require the co-operation of the Central government, the state government and other state governments as well as NGOs. Newspaper reports say that the government spends Rs.3,50,000 to

cont'd. on p.11



Cornucopia

Firoze Hirjikaka

The “Foreign” Fetish

For some inexplicable reason, Indians have always had a fascination for things “foreign”. During the era of Nehruvian socialism – now mercifully behind us – even the shoddiest products commanded a premium, merely because they carried an “imported” tag.

Sixty years after independence, most of us still haven’t lost our inclination to offer obeisance to foreigners – particularly the white-skinned variety. Enter any upscale restaurant and it will inevitably be the table with the goras that receives maximum attention from the waiters. The same story is repeated in commercial establishments, airline check-in counters and so many other places.

It is not surprising, therefore, that “foreign” educational institutions have been mushrooming, of late, in this country. You can be reasonably sure they haven’t arrived at our shores out of some altruistic mission to spread education among the masses. They obviously find it very profitable to set up shop in this country – hardly

surprising since many of them charge annual fees of around three lakh rupees. Moreover, the only thing foreign about most of these institutions is their name and, perhaps, some course material. Almost all the teaching staff is locally sourced. Whether the education they provide is superior enough to justify such exorbitant fees is a matter for debate.

According to recent newspaper reports, it turns out that the vast majority of these foreign institutes do not have the necessary government approvals and, hence, the degrees and diplomas they award may not have much value. It is already becoming evident that the degrees and diplomas in medicine, management and technology are not being recognized by the public sector and many of the large private sector companies.

One would hope that this news would come as a wake up call for brainwashed parents with more money than sense but, given the unjustified “snob” value attached to these “foreign” institutes, it appears doubtful.

The “After” Effect

Can anyone explain this mental block in the mindset of our politicians and the law enforcement machinery they control, that seems to stir them from their slumber only after the event? A case in point is the recent rioting and destruction of property that took place across Mumbai and Maharashtra, following the desecration of an Ambedkar statue in Kanpur.

Very predictably, Chief Minister Deshmukh called for an all party meeting to “discuss how the state can maintain peace and avoid such incidents in future.” May I remind the “honourable” gentleman that “such situations” have been occurring with alarming regularity in his state? Indeed, if practice makes perfect, they should be experts, by now, at “avoiding such incidents.” In the case of the Ambedkar riots, prevention required no degree of intelligence, but just plain common sense. The fruit vendor in the street could have warned the authorities that the statue desecration was just the spark likely to lead to a conflagration of already simmering Dalit anger. Alas, they just don’t seem to learn from experience.

It is the same story, with our law enforcers, every time there is a bomb blast, or other kind of terrorist attack in the city. The tragedy is hardly ever anticipated through

hard intelligence. Worse, it is followed by a fruitless, knee jerk reaction after the horse has bolted. Hours after the attack, the venue is surrounded by hundreds of policemen and a *nakabandi* and other steps are put in place throughout the city, inconveniencing thousands of ordinary citizens. The total fiasco of the recent “massive security exercise” at Churchgate station is still fresh in public memory. It would be worth it if it served any useful function; but does it? It is merely a profligate and unnecessary waste of scarce resources. No terrorists have the resources – or, indeed, are stupid enough – to attack the same place again after a few days; and especially when the police are on high alert. Moreover, deploying thousands of policemen to stop traffic and frisk large sections of the public is an exercise in futility. The average Mumbai havaladar has no clue about what to look for. Trapping a highly trained and motivated terrorist requires an equal degree of expertise on the part of the law enforcement authorities. It is all a wasteful show.

Truly, as a wise man once said, “the more things change, the more they remain the same.”

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Rajaji's 128th Birth Anniversary

December 10 was Rajaji's 128th Birth Anniversary. To mark the occasion, we publish two contributions from Mr. S. S. Bankeshwar and Mr. K. N. Narayana Pillai.

An Interview with Rajaji – Revisited

S. S. Bankeshwar



This interview with the late Rajaji, perhaps the greatest intellectual of India in the last century, was my first interview with a VIP in 1954 when I started freelance journalism.

If I remember right, this interview was at the residence of Rajaji's close friend, the late Shri Navaratna Rama Rao.

Rajaji made it clear to me at the beginning itself that he would not entertain any questions on politics as controversies chased him whenever he was interviewed by journalists! This disheartened me at that time. He said, 'Look, even if I say $2+2=4$, our politicians suspect some hidden meaning in it!'

Music

SSB: Rajaji, you say that you do not know music, as you do not understand its grammar and that you do not distinguish between 'ga' and 'pa', just as you do not distinguish between a congressman and a communist. Yet, you say that you love music. Any explanation?

CR: "Knowing the grammar is one thing and loving music is quite another. To love music, you do not have to know its grammar. I love Thyagaraja's bhajans and Subbalakshmi's bhajans. I also love Hindustani classical music, though I do not understand its different "*gharanas*", other than two - patriotic *gharana* and commercial-minded *gharana*. Bal Gandharva who contributed a lot to Gandhiji's freedom movement and Subbalakshmi's generous contributions to all worthy causes belong to a patriotic *gharana*.

Politicians

SSB: You asked young people not to take up politics as a career but concentrate on studies. Yet, you are a politician. You also said that politicians are parasites, and yet you are a politician! Any explanation?

CR: What I said was that professional politicians, who live off politics and who are incapable of earning an honest rupee by hard work, and yet amass wealth, are political parasites. There are quite a few honest politicians who

have got an independent source of income. They do not live off politics. They also do public service. Politics is not their career. Such politicians by no stretch of imagination can be called parasites.

SSB: You said that most politicians are illiterate. An illiterate is one, who cannot read or write. I, therefore fail to understand how you can call our politicians illiterates.

CR: In terms of its dictionary meaning, what you say is correct. Although I am not an agnostic, I am inclined to agree with Mr. Bertrand Russell who said the other day that an illiterate is also a person who is incapable of understanding, learning and re-learning. By this standard, I should say that most of our politicians are illiterate.

Atheism

SSB: You said the other day EVR, a confirmed atheist, actually believes in God secretly. On what basis did you say that?

CR: EVR breaks the idols of God because he is angry with God. How can you get angry with a non-existing God?

SSB: I am inclined to agree with Hobbes, the father-figure of democracy that the men in the mass have not changed a wee bit in spite of the Bible, the Koran, the Gita and the Vedas and that the men in the mass are naturally and fundamentally selfish, power-hungry, cruel and perverse. Any comment?

CR: An excellent question. In the first place, Religion is really meant for the classes and not for the masses. Religion makes your mind more productive, trade more flourishing, bodies more active, minds more original, hearts more pure, industries more varied and our nation more united and disciplined. This is in fact not my statement at all; I am only quoting from the Vedas. Religion trains both head and heart. Our Vedas say that intelligence, ability, skill, commitment to values, character, integrity, courtesy and courage should all work in harmony for the benefit of mankind with dedication, devotion and determination. Vedas also say that you sow a thought, you reap an action, you sow an action, you reap a benefit, you sow a habit, you reap a character, you sow a character, you reap a destiny. It all starts with thought.

SSB: It is sheer human vanity to think on the part of anybody (including scientists) that he or she has an answer to every question under the sun. For instance, there can never be an answer to the question of who created God or who created the Creator. It is an endless question. Any comment?

CR: You raised an important question. Yes, there can never

Remembering Rajaji

While remembering Rajaji, the intellectual giant, two episodes personally experienced by the author who has crossed 80, are worth narrating.

He was a guest speaker at Loyola College, Chennai in 1948. The meeting was presided over by our then principal, Father Jerome D'Souza who was also a member of the Indian Constituent Assembly. Rajaji began his speech, and seeing only 45 boys present, he turned to the principal, and jocularly remarked, "Father, why don't you admit the fair sex also in the college?" His style of speech evoked acclamation, admiration and laughter from the audience.

The second event occurred in the Madras Legislative Assembly when he was the Chief Minister of the composite State in the 1950s. The opposition leaders were stalwarts like Tanneti Viswanathan, Comrade P. Ramamurthy etc. The comrade, an M.A. Oxen, was a brilliant scholar and orator. In one session, he levelled his arguments supported by quotations from the Bhagavad Gita throughout his marathon speech, which was appreciated and applauded by the entire assembly. Rajaji got up and congratulated him for his able exposition, but he stuck to his gun stating that the Communist Party of India was his enemy number One from A to Z. He added that he had imprisoned the comrades within the four walls of the Assembly.

The above noble culture is totally absent today. The present C.M. and the Opposition Leader do not see eye to eye, forget about exchange of nice words between them. Are they part and parcel of democracy for the younger generation to emulate?

During the 1950s, we students used to attend CPI meetings. One comrade, M. Kalyanasundaram used to mention Rajaji as "*Karutha Kannadi Vecha Mamblam Chanakyan*" (the black spectacled Chanakyan of Mamblam). Rajaji was then staying in Mamblam (T. Nagar), and wore black spectacles. He was considered a cunning politician by his junior, immature political rivals.

His death anniversary falls on 10th December. A

be an answer to this question, unless you conclude that there is no beginning and no end and God and the stars have always existed. Rajaji then took a paper and a pencil and drew a circle. "Now, tell me, which is the beginning and which is the end", he said.

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K. N. Narayana Pillai

humble homage is offered to the great statesman, the conscience-keeper of Mahatma Gandhi. He was not only a statesman, but also a humanist, an administrator of admirable ability, intelligent, bold in conviction. He adorned the 20th century as a freedom fighter and torch bearer in implementing social reforms. His Roman nose attracted the cartoonists. He was a zealous crusader for prohibition, unapproachable for personal favours. He was always preoccupied. He never cared about personal attacks or erroneous views about him. He was a shrewd mediator in dealing with M. A. Jinnah and Stafford Cripps. He was scintillating at press conferences in his witty simple language.

Sacrificing his lucrative legal career at Salem, which earned the epithet 'Pune of South India', he plunged into the freedom struggle. He was keen on Harijan uplift. He launched prohibition to protect suffering women folk from the insults and assaults of their drunken husbands, and to save them from poverty. In his Cabinet, he included women such as Jothi Venkatachalam. He patronised inter-caste marriages by marrying his second daughter to Devadas Gandhi, son of Mahatma Gandhi. He remained unprovoked. He was against dynastic rule and interests. His short stories, learned illustrations, speeches punctuated with parables captured the hearts of the younger generation. He spoke with passion, but kept his emotions under control. The values and virtues cherished and nourished by such illustrious sons and daughters of India for future generation to flourish are perishing and vanishing. We have to cry a halt to this tragic fall, as a humble homage to veteran leaders like Rajaji.

At Mylapore in Chennai, which is the citadel of culture, we have an institution called Rajaji Centre for Public Affairs, patronised by Rajaji's ardent admirers like the well known chartered accountant, G. Narayanaswamy and the veteran retired civil servant, B. S. Raghavan. They conduct weekly meetings on Sundays in Rajaji's memory. Eminent speakers are invited to talk on subjects of current significance. This writer regularly attends these meetings.

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John Stuart Mill

Remembering a great Liberal on his 200th Birth Anniversary

Peter Cave

‘If a tenth part of the pains taken in finding signs of an all powerful benevolent god had been employed in collecting evidence to blacken the creator’s character, what scope would not have been found in the animal kingdom?’ declared John Stuart Mill. “It is divided into devourers and devoured, most creatures being lavishly fitted with instruments to torment their prey.”

He meant that to base moral values on what happens in nature would be to justify the worst excesses of human behaviour. So any god, whose will and character is revealed through nature, has a good deal to answer for. As can be seen, this most radical and courageous of thinkers had a pretty dim view of some basic traditional religious teachings.

John Stuart Mill was born 200 years ago. Towards the end of his life, he took an interest in the emerging theory of evolution, but his final view tended to be that it was slightly more likely than not that there was a finite intelligent designer that had ordered the world. Given the development of evolutionary theory in recent years, it is likely that the balance of probability in his eyes would now tip away from such a designer. This kind of thinking is Mill’s hallmark. He considers the evidence, reasons towards plausible explanations, and is prepared to speak out against entrenched opinions.

Mill’s concern for reason and evidence arose from his extraordinary education. His father James was himself a university graduate, and later would become a leading member of the council of the ‘godless’ University College London, though he thought formal schooling over-rated. He embarked on an ambitious education programme for John, starting him on ancient Greek at the age of three.

This early training certainly had an impact on the young Mill and in his maturity, he believed education vital, allowing people to make better choices about themselves and about the greater good. That ‘greater good’ is the foundation of utilitarianism; the philosophy which advocates actions that promote the greatest happiness of the greatest number.

Some humanists have traditionally been wary of utilitarianism, precisely because of its seemingly numerical,

materialist and calculating approach to social philosophy. But Mill’s utilitarianism should not offend humanists, for his idea of happiness was far more enriched, involving individual flourishing that would typically involve concern for others, for feeling, for dignity and much more. Mill categorises some pleasures

as more valuable than others. They are the higher pleasures. Poetry gives a higher quality pleasure than pushpin (a child’s game); it is better, as he famously put it, to be a dissatisfied Socrates than a satisfied pig.

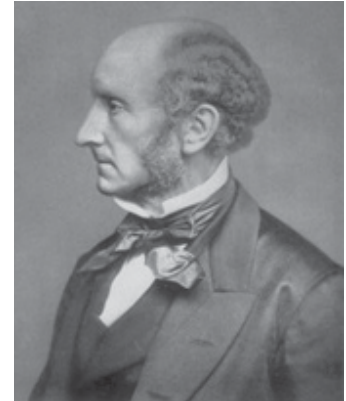
“It is better to be a dissatisfied Socrates than a satisfied pig”

Talk of higher pleasure might make Mill sound like an elitist. In a sense, he was, but the way in which he was not, was that he thought that virtually everyone could-achieve these higher pleasures, given better education and welfare. Advocating votes for all adults, men and women alike – though still with some qualifications concerning paying taxes – he consistently campaigned for women’s suffrage. Indeed, his feminism is probably one of his most radical and forward-thinking principles.

It seems, indeed, that in his youth he was arrested and brought before magistrates for distributing birth control tracts. And when in 1865 he was elected to parliament as a liberal, he strongly supported one of Gladstone’s most significant reforms: the Married Women’s Property Act.

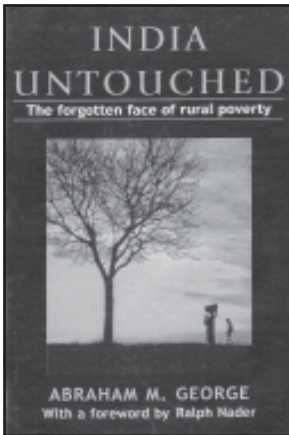
But despite his engagement with politics, Mill was vocal about the need for minimal state interference. The state should only be able to restrict the actions of sane adults if those actions are likely to be harmful to others, and should certainly have no business legislating on what people do privately. When he finally married his long-term love, Harriet Taylor, Mill voluntarily resigned his

cont’d. on p.11



1806-73

Book Review



INDIA UNTOUCHED - The Forgotten Face of Rural Poverty

by Abraham M. George

Publishers: East West Books (Madras) Pvt. Ltd., 571, P. H. Road, Aminjikarai, Chennai 600029. **Year of Publication:** 2004 **No. of pages:** 400 **Price:** Rs.295/-

Reviewed by: HUMERA AHMED, a writer of short stories. She is currently PMG, General Post Office in Mumbai

The message of the book *India Untouched* is best illustrated through the words of the renowned critic Cornwell West reproduced below whom the author Abraham M George quotes in chapter 8 titled 'Unequal and Powerless'.

"The quest for truth, the quest for good, the quest for the beautiful, all require us to examine how we live, and let suffering speak, let victims be visible, and let social misery be put on the agenda of those with power.

The life of a thinking man, one with feelings and soul, cannot be separated from the struggle of those who have been dehumanized on the margins of society."

It is precisely this - creating awareness for the suffering and social misery of those on the margins of society, and building model institutions to effectively address the problems of poverty, disease, deprivation and inequality is what George Abraham undertook and it is his experiences in this endeavor which he documents in the above book.

Subtitled **The Forgotten Face of Rural Poverty**, **INDIA UNTOUCHED** is a fascinating and moving account of a man who denied himself the comforts of wealth and devoted his time, energy and money for alleviating the plight of the rural poor.

Born and brought up in India -after a short stint in the Indian Army- George migrated to America where he acquired a doctorate in Business administration. Not satisfied with teaching, he founded his software company. While he attained financial success his heart longed to work for the well being of his countrymen. Hence after twenty-five years i.e. by 1995 he felt he had accomplished his professional goal he decided to devote himself to humanitarian work in India. To acquaint himself of the poverty and social misery the images of which he had seen on American television he undertook a study tour of rural India where 350 million people exist in economic deprivation, untouched by the programme and benefits of industrialization and information technology. He found them plagued by malnutrition, illiteracy, disease, and inadequate shelter, lack of sanitation, harassed by govt officials and exploited by the landlords.

Overwhelmed with the magnitude of the problems he tried to address key issues: education, economic development, social justice, women empowerment, health

care, environment, free press Ethics, art and culture and offers suggestions in bringing about sustainable development. His suggestions stem from his unique perspective: rooted in the Indian culture but exposed to western philosophy and civilization and a wide experience in various fields, are both pragmatic and innovative. However his real contribution lies in demonstrating through his social work how poverty and social equality can be addressed in India.

To facilitate his work of upliftment of rural poor he set up the George Foundation in 1995. Under the aegis of this foundation he built institutions in and around the villages of Balliganappalli and Dewarpalli in Karnataka which can serve as role models on how quality education and health can be made available to the underprivileged: Shanti Bhavan and Baldev Center – a rural medical and community centre. His 150 acre Baldev farm not only demonstrates modern techniques of farming but also introduced a programme for women empowerment.

Aware of the need to raise concerns for broad basing his initiatives so that more people could participate in the solution i.e. either by contributing money or volunteering time, it was necessary to have a free and independent press. He therefore set up the Indian institute of journalism and new media with a 30,000 thousand sq.ft. of modern facility which opened to students in January 2001.

But the setting up of these institutions was quite a daunting task, as he had to fight against bureaucratic hurdles and a well-entrenched system, which sought to maintain the status quo. It is his struggle against the system and his perseverance in building the institutions, which makes it a moving and inspirational story, and a compelling read for all those who wish to make a difference to the lives of millions living on the margins of society.

BMC – Governance is *the* Issue (cont'd. from p.5)

rehabilitate slum dwellers. BMC should make a survey of slum dwellers to find out how many of them are ready to go back to their state/town if they are trained in any profession they wish and practice it in their native place. This should be able to help them start a new life. Licensed hawkers can be given kiosks with a uniform colour along with a refuse bin to collect all the throw-aways. Others can be accommodated in a weekly bazaar/evening or night bazaar. They too could be induced to go back to their states with the cooperation of their respective state governments.

An Identity Card

BMC should give identity cards to all citizens. The card should have not merely the address but also the economic, social and educational status of the person. It

could be used for elections, passports, entitlements, opening an account in a bank or post office and for other similar purposes.

De-congest Mumbai

Mumbai is too crowded. Mumbai can be saved only if we develop many satellite towns on the mainland. There could be many such towns specializing in one trade or industry such as Software, garments, toys, jewellery, banking and many others. The proposed SEZ may help this process.

This is not a blueprint. These are just a few ideas which I hope will provoke some debate and discussion on the Mumbai that we want to build.

Mr. M. D. Kini is a freelance journalist.

John Stuart Mill (cont'd. from p.9)

statutory rights, opting for a more equal partnership and refusing to allow state control of his private relationship.

However, he strongly believed that when people voluntarily take on obligations, they should honour them: so it's perfectly all right for an individual to live in an intoxicated haze, but not if that would harm children or other dependants. Having offspring creates an obligation to nurture and educate them well. If would-be parents cannot afford this, they ought to remain childless.

I suspect he would oppose maternity and paternity pay, on the grounds that we should make our own destinies and be responsible for our own choices. In that sense, he's something of a pivotal figure, hovering between the self-reliance espoused by Enlightenment figures like Adam Smith, and socialism's emphasis on the responsibilities of the state.

Perhaps Mill's most humanist principle is his commitment to liberty. To fulfil our potential, he argued, we must be free to make our own choices - otherwise, we are robots. The most fundamental liberty, for Mill, is the right to free speech, which he saw as essential for progress. If what is spoken is true, that benefits us; if false, that should stimulate us to challenge. In a sentiment with powerful contemporary resonances, he maintained that mere offence that may be caused by what is spoken is swamped by the benefits of the speaking.

Mill spoke of the 'Religion of humanity', optimistic that social co-operation and fellow feeling would increase with improved conditions and education - all part of the truly human flourishing life.

Courtesy: NEW HUMANIST May/June 2006 reproduced in The Atheist published from Vijaywada.

Infelicitious Words 'Asian' & 'South Asians

This is with reference to 'Point Counter Point' in the September 2006 issue of *Freedom First*. In the second point, there is this sentence, 'is there no remedy as all Asians become suspect in the eyes of the western world who tend to go by assumptions than facts?'

This expression "Asians" is a non-descript one, There are Mongolians, Tibetans, Kampuchean and Hindus, who are not terrorists in defence of their religions. They are Asians. On the other hand, among Asians there are Pakistanis, Bangladeshis, Saudi Arabs, Afghans, Palestinians, Syrians, Iranians etc., from among whom there are thousands of jihadi terrorists. It is to escape the description Pakistani or Bangladeshi that some organisations in these two countries want the Pakistani and Bangladeshi Muslims to be clubbed with Hindus of India under the phrase 'South Asians'. There is nothing in common excepting race and a few languages between the Hindus, Buddhists, Sikhs of India on the one hand and Pakistani and Bangladeshi Muslims on the other. I suggest that this infelicitous and fraudulent word, Asians or South Asians be avoided.

Dr. T. H. Chowdary, Hyderabad

Between Ourselves ...

A subscriber from Bantwal in Karnataka writes: "I welcome your decision to publish *Freedom First* every month. To have eight 12-pagers over and above the present quarterly issues is great indeed and a feast for readers like me. I hold myself very fortunate because *Freedom First* provided me much exposure to various issues related and relevant to human and civilised society. It also brought me in touch with the Project for Economic Education and late M. R. Masani." Another from Chennai, while renewing his subscription, has this to say: "My best wishes for the success of your efforts to keep the true democratic spirit of the late Minoo Masani alive in a world where many more with the Minoo Masani vision are needed to stem the tide of greedy self-seeking politicians taking control of the destiny of the country."

The monthly is giving us the opportunity to keep in touch with you twelve times a year and not once every three months. We look forward to your participation in

the columns of this journal now its 54th year of publication serving the cause of freedom and liberty.

In the last issue in this column I noticed an error. Gripping about receiving queries from readers regarding *Freedom First*, I had suggested "It might be a good idea if when you get your copy you turn to page 1 before moving on to read the inside pages." This column appears on the *first* page of the January, April, July and October editions but on the *last* page in its 12-page version. The rationale is that since it does not have a cover with an attractive illustration in colour, the first page should catch your eye! The first page in this issue for instance written by Sharad Bailur a writer and member of our Advisory Board takes you through the revolutionary Nano-technology or Molecular Engineering and why Indians should stay ahead in this technology as we have done in IT.

Editor

Many Voices

There is anxiety talking about the issue. And normally one feels shy to go to a chemists's shop and ask for a smaller size condom.

Dr. Chander Puri, responding to a survey that found that the standard international condom size is too large for most Indian men. *Newsweek*, December 20

If Dalits and tribals in India suffer from high poverty and pathetic education and health, it is not the fault of the IMF or multinational corporations. It is the fault of decades of socialism and continuing government failure.

Swamathan S. Anklesaria Aiyar,
The Economic Times, December 20

A new legislation has been proposed in India that would restrict foreign funds for Indian NGOs. I view it with great alarm.

Nobel Laureate and Bharat Ratna Amartya Sen,
The Economic Times, December 20

As the PM ponders his response (to the Sachar Committee Report on Minorities) he will do well to remember that what is at stake is not just uplifting this or that group, but the very idea of India itself.

Pratap Bhanu Mehta, President, Centre for Policy Research, *The Indian Express*, November 18



COURTESY: Mr. Yesudasan and *The Week*, December 3

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