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NONALIGNMENT 2.0

A POLICY FRAMEWORK FOR 21ST CENTURY INDIA

This is 'a foreign and strategic policy for India in the twenty first century' titled NONALIGNMENT 2.0 produced by eight well known experts and public intellectuals. It is a document containing seven chapters, besides a preface, an introduction and a conclusion, in all 309 articles/points that portray the legacy inherited, the challenges confronting the nation and the options available for the way forward to emerge as 'not just a powerful nation but as a nation that sets standards for what the powerful must do.' Obviously the inspiration for crafting a policy framework on such a high moral plane for India of the 21st century is derived from the philosophical foundations of nonalignment and the manner in which it was designed and articulated by Jawaharlal Nehru. At the height of the cold war when international relations were dominated by the two superpowers, USA and USSR, voices emanating from India, Yugoslavia and Egypt, countries without any claims to big power status, were heard with respect, if not admiration, by more than a hundred countries of the world. That nonalignment, now made the original first, has been reworked and finetuned by these intellectuals into 'a grand strategy and fine-grained, detailed analysis and action' under the title NONALIGNMENT 2.0. The challenge, according to the authors, is 'to renovate that value and goal for twenty first century' and to build 'national consensus about India's strategic priorities and opportunities.'

The introductory chapter unveils the scope, goals and objectives of the framework in thoughtfully structured themes and timely reaffirmations such as *–India's power in the world is going to be the power of its own example,*

under no circumstances should India jeopardize its own domestic economic growth, its social inclusion and its political democracy. Each of the seven chapters that follow deals with specific subjects like *The Asian Theatre, India and the International Order, Hard Power, Internal Security, Non Conventional Security Issues, Knowledge and Information Foundations and State and Democracy.*

India's strategic relations with immediate neighbours in Asia, in the subcontinent in particular, are presented against the backdrop of emergence of China as a great power and terrorist attacks emanating from the neighbourhood. Sino-Indian and Indo-Pak relations understandably receive particular attention. Good relations with all closer relations with neighbours, the motto of the early years, assumes importance in the context of India's quest for global power status.

The concluding chapter begins with the identification of *'the principal challenge of lifting millions of impoverished citizens out of poverty.'* The aspirations and energy unleashed by democratic India must be converted into 'dynamism not seen in Indian history for millennia.' India's strength lies in its commitment to the values of a liberal, secular, and constitutional democracy nurtured by Gandhi, Tagore, Nehru, and Ambedkar and India's adherence to the highest human and universal values has created an enormous moral and ideological capital, write the authors.

This treatise is a welcome, thought-provoking and timely contribution to healthy public discourse on what the Indian state and society must do at this critical juncture.

The Editor

The pursuit of peace, not through alignment with any major power or group of powers, but through an independent approach to each controversial or disputed issue, the liberation of subject peoples; the maintenance of freedom, both national and individual; the elimination of want, disease and ignorance which afflict the greater part of the world's population. Jawaharlal Nehru on India's foreign policy at Columbia University (US) in 1949.

Geopolitical Consequences of the Global Financial and Economic Crisis: Back to the Drawing Board

- Shri Shyam Saran,

Chairman RIS and Former Foreign Secretary

Each of my annual presentations since 2009 have retained the main title i.e. The Geopolitical Consequences of the Global Financial and Economic Crisis, though the sub-themes may have been different. I have not felt the need to move on the another title because, as anticipated, this crisis is not being dissipated in a hurry. It is still ongoing. It is still driving geopolitical changes, though its manifestations may keep changing. It is important not to be distracted by the symptoms, but to grasp the fundamental well-springs of the crisis, understand its underlying causes and how it continues to play itself out. Only then can we hope to succeed in overcoming it. Drawing upon my earlier presentations, let me outline what I see as some of the relative certainties and underlying realities that can now be discerned four years down the line.

One, this is truly a crisis of global proportions. It erupted at the very heart of the capitalist system, the U.S. and has rapidly spread to the entire global economy through the multiple, interconnected, increasingly digital and, therefore, virtually instant, transmission channels. As a result of these dense pathways which bind the world economy together, market impulses which flow through them, from one point to another, often tend to act in cumulative fashion, reinforcing rather than balancing each other. This is a different beast from the notion of a self-balancing, self-correcting “natural” economic order that has dominated thinking in the capitalist world since the time of Adam Smith. As these cumulative forces play themselves out, they exacerbate imbalances, as with the asset-price bubbles we often witness, and these now impact not only national economies but across the global economy. As India becomes increasingly globalized, its fiscal and monetary policies must be determined within the context of a complex and often volatile external environment.

Two, at the heart of the global financial and economic crisis is the massive and persistent fiscal and trade deficits in some major economies with corresponding surpluses in others. The U.S. and China represent the two ends of this spectrum. The global economy has several players and it is possible that, at any given time, some may be in surplus while others may be in deficit. But the global economy, in the aggregate, must remain in balance, that is, for every creditor there must be a debtor, for every exporter there

must be an importer. The corollary to this is simple. If major deficit countries begin to retrench to rebuild their balance sheets, surplus countries will Geopolitical Consequences of the Global Financial and Economic Crisis: Back to the Drawing Board – Shri Shyam Saran, Chairman RIS and Former Foreign Secretary

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must be an importer. The corollary to this is simple. If major deficit countries begin to retrench to rebuild their balance sheets, surplus countries will necessarily have to run down their fiscal and trade surpluses. Failure to reduce these accumulated imbalances over an extended period of time will only deepen the crisis. I have pointed out in my earlier presentations that the stimulus measures adopted by all major economies, surplus and deficit, in the wake of the 2007-08 crisis, exacerbated and widened global imbalances instead of correcting them. Four years down the line, we see little sign of the surplus, creditor countries like China and Germany, taking measures to stimulate domestic demand and imports. Their continued reluctance to do so, for political and social reasons, means that deficit countries will seek to restore balance by making their currencies cheaper through monetary easing. They will need to cut domestic expenditures, adopt austerity measures, and reduce their own imports drastically, through protectionist measures if necessary. These measures, taken together, will impose, on surplus countries, reduced exports, because of falling external demand, capital outflows due to interest rate differentials and lower income and employment as excess capacity, the result of high but unsustainable investment rate in the past, begins to manifest itself on an increasingly large-scale. What we are witnessing today is the beginning of this cycle i.e. the rebalancing of the global economy through measures taken out of compulsion rather than through deliberate choice. It is for this reason that I have argued that China faces as difficult a task of rebalancing its surplus economy as the U.S. confronts in rebalancing its deficit economy. And I believe that as China's economy retrenches, as it must, the impact on the global economy and hence on India as well, may be as severe as the recession in the U.S. and other Western economies.

We should be mindful of the fact that just as it is politically risky for the U.S. to adopt the measures required to bring its books into balance, especially in an election year, the same is true of China, which has just entered its year of wholesale political leadership transition. In Europe, there is a similar situation. For the Eurozone to overcome its persistent crisis, Germany cannot continue to export more than it imports from its European partners. It cannot continue to draw assets away from deficit countries in Europe, while insisting on the painful restructuring of their economies. While this is clear to policy makers, domestic politics prevents the appropriate policies from being adopted. The Eurozone is in flux and its future remains in doubt.

The global economy, therefore, will continue to be in

crisis for an extended period of time. The crisis will only be resolved either through extraordinary and sustained coordination and concerted action among the major industrialized and emerging economies, for example in the G-20 or through a series of measures forced upon the key actors by the inescapable logic of basic economic laws. There is no "exceptionalism" for any economy, neither for the U.S. nor for China or for that matter for India. This ongoing crisis has, and will continue to spawn unexpected consequences geopolitically. India needs carefully crafted and effective coping strategies.

Three, I had argued in my presentation last year that the two pivots around which geopolitics will play itself out are energy and maritime security. We are already in an energy constrained world and moving inexorably towards a resource constrained world. The events in the Gulf and North Africa are significant for two reasons: they affect the supplies and prices of oil and gas, 40% of which still originate from this region. And the Straits of Hormuz is a narrow corridor through which much of the oil travels in the direction of the most rapidly growing markets of Asia to the East. Energy security and maritime security have thus become interlocked in a complicated political transition that is unfolding in the region.

The search for energy security may create new threats of geopolitical competition, as they are already doing in the Arctic Ocean, in Africa and in Central Asia. The routes to consuming nations are mostly over the oceans and increasingly through pipelines, and these are vulnerable to security threats. A competitive military build up will be the response of the countries affected, in the absence of any structural and multilateral arrangements to mutually assure security. India's security planning and its foreign policy priorities must reflect these emerging priorities.

Four, there is no doubt that the long-term trend is towards a steady diffusion of political and economic power, away from the trans-Atlantic, radiating in different directions, but with the Indo-Pacific region gaining the most in terms of relative weight. Here I would like to acknowledge the contribution of Admiral ArunPrakash, former Chairman of the National Maritime Foundation in advancing the Indo-Pacific formulation in the Indian security discourse.

Given the presence of India, China, Japan, South Korea and Indonesia in this region, it is easy to see why it is emerging as a new centre of gravity geo-politically. And yet this is the region which has several potential triggers for conflict, such as the continuing instability and tensions on the divided Korean peninsula, the unresolved maritime

disputes between China and Japan and China and several ASEAN countries, the issue of Taiwan's status and the potential for renewed military confrontation in the Taiwan Straits, which may involve the United States, the unresolved boundary dispute between India and China and, finally, the India-Pakistan conflict. Behind some of these unresolved issues are also the questions of exploiting potential energy resources and securing maritime routes. Thus even as the region is gaining in relative weight, it is becoming more vulnerable to conflict. This is reflected in the competitive arms build up which is taking place across the region.

Asia is the geopolitical centre as far as India is concerned, but its historical neighbourhood encompasses the region extending from the East Coast of Africa, to Central Asia and then beyond to East and South-East Asia. As India's economic and military capabilities increase, its geopolitical footprint is likely to spread along these historical zones. Any long-term vision for India would inevitably locate its destiny within this extended neighbourhood. The global financial and economic crisis has loosened existing alliances and alignments. It has opened up spaces for India to expand its footprint as a major power. I see many opportunities for India to evolve into a truly global power, using its extended neighbourhood as the proximate platform to do so. This demands a sustained and accelerated growth in India's economy, a stable and coherent polity and above all, a geopolitically aware and visionary leadership. We may be lacking in each of these aspects and, therefore, unable to leverage the opportunities that are constantly emerging as the global order undergoes an extended transition. However, I remain optimistic because in a plural and democratic India, change often comes from unexpected sources at unexpected moments.

That leads me to the sub-theme of my presentation today. Why do we need to go back to the drawing board?

My sense is that Indian policy-makers, like their counterparts in other countries, have assumed that the global financial and economic crisis, is really an unexpected departure from the norm and there will be, sooner or later, a recovery to an essentially familiar economic order, with some new and modified features. The fact is that there is no recovery to the pre-crisis state possible. The world which is emerging before our eyes will have very little in common with the world we left behind in 2008. In fact, the crisis of 2008 erupted precisely because we failed to keep pace with the very rapid and significant systemic changes taking place across the globe. An entirely different set of tools and a very different mindset are required to deal with what is already a fundamentally altered terrain. In this part of my

presentation, I will outline only some aspects of this new reality and how India must redraw its strategies and plans for the future.

I spoke about our entering into a resource constrained world. This has implications for our growth strategy. To begin it, we must recognize that the ongoing financial and economic crisis, triggered by the over-leveraging of financial assets, is only a symptom of a far greater and more pervasive resource-crisis, which is evident in the over-leveraging of Nature's finite assets. Deleveraging our claims on Nature is as important as deleveraging our financial overstretch.

Taking into account the compelling and inescapable reality of an increasingly resource-constrained world, India needs to link the aspirations of its people and its prospects for accelerated growth to what I would call a "resource-frugal" instead of a "resource-intensive" strategy of development. I believe that such a strategy would enable India to sustain a high rate of growth over a more extended period of time, delivering affluence without waste, and current welfare without sacrificing the welfare of future generations. I will touch upon just a few illustrative examples.

The notion of frugality is current in some sectors of our economy and has been successful enough to attract international attention. "Frugal manufacture" is already acclaimed as Indian industry's contribution to innovative production processes. This involves the stripping down of complex machinery or devices, to their most essential applications without frills. An example is the cost-effective, easy to use, hand-held ECG machine, which is a major contribution to public health. The other is the use of the mobile telephone to deliver information, services as well as funds on a low-cost and widely spread platform. Even in agriculture, there have been significant successes in promoting production processes which are dramatically economical in the use of water, dispense with the use of costly chemical fertilizers and pesticides or GM seeds and still deliver high agricultural output, ensuring food security. This is frugal agriculture. What should be appreciated is that these innovations, by making products affordable, lead to significant market expansion. This in turn brings economies of scale, further lowering of costs and generating even greater demand in a virtuous, self-reinforcing circle.

2. The hallmark of any modern society is its ability to deliver rapid, affordable and efficient means of mobility to its people. Enabling people to exercise their right to mobility is a critical state responsibility. However, mobility is linked

to the use of energy and the use of scarce land, both of which are in short supply in our country. It follows, therefore, that we must have a transport strategy that ensures the most economical use of these resources. The continued expansion of private vehicular transportation is not sustainable. If the density of private car ownership in India were to approach U.S. or European levels, we would be using liquid fuels far in excess of the total consumption of all such fuels globally today. Just the space required for parking a billion cars and constructing highways for them to run on, would occupy land on a scale that would leave little space for any other activity. Therefore, shifting resources from private transportation to public transportation and investing in the latter to make them convenient, comfortable and cost-effective is another essential component of a “resource-frugal” strategy. Greater mobility ensures a more productive population and a more efficient distribution of goods and services. This is what can ensure a sustained and high rate of growth.

3. If frugal process is what India is good at, it can add value to each of the sectors of its economy by leveraging its proven strengths in information and communications technology. The systems which make modern economies run, whether these are the power supply networks, the transportation system, the distribution of goods and services, the water supply system, to name only a few, are being transformed through the use of modern data analytics. The placement of sensors at critical points in any economic process, generates massive and continuous mass of real time data, which high powered computers, using sophisticated software can analyse in considerable detail and propose what are called “smart” solutions. This reduces waste to the minimum, eliminates redundancies in processes and improve efficiencies all around. This, too, is an example of “resource-frugality”. Some Indian IT companies like TCS and WIPRO, are already doing data analytic projects for multinational clients, but it is India which can provide the biggest market for such value-added services, which can act as a multiplier across the board in a range of sectors in the Indian economy. What is important to appreciate here is that such services are really the hallmark of a flat world, because they can add value in developing societies as they can in advanced ones.

The purpose of providing these examples is to add some substance to the overall optimism I retain about our future as a plural, democratic and innovative society, despite the seeming gloom around us.

This brings me back, in conclusion, to geopolitics. It is inevitable that Indians constantly compare themselves to

China and despair at the growing gap they see between our overall national capabilities. We can narrow this gap, as I think we must, not by playing catch-up with China, not by yearning to be more like China. There is more to be gained by being more India, not China, in our strategies. Each of the examples I have mentioned responds to the new world which is emerging, and not seeking to re-create the old. What is more, each of these innovations enable inclusive growth because they empower the poor; they profit from leveraging the power of numbers. What we need is to upscale these successes from the margin to the mainstream, from the local to the national level.

Their impact will be felt not just in India but throughout the world precisely because they address what I described as the fundamental cause of the current crisis. If we can give a compelling intellectual shape to these ideas and reorient our economic and security strategies in line with them, India could lead by the power of its example.

Courtesy : southasiamonitor.org



K.S. MEMORIAL LECTURE

Shri Shiv Shankar Menon

National Security Advisor to the Prime Minister
and Former Foreign Secretary

(K. Subrahmanyam who passed away last year was an outstanding strategic thinker, prolific writer and institution builder whose advice was sought and received with respect and admiration by policy-makers think-tanks, academia and public intellectuals. On sensitive subjects like security, nuclear power, defence and strategic affairs he spoke and wrote with the wisdom of an oracle and vision of a statesman. The renowned civil servant and scholar-intellectual was also admired for the qualities of his head and heart and simple living. He was affectionately known as ‘Subbu’ ‘or K.Subs’. The first K.S. Memorial lecture delivered recently by Shri Shiv Shankar Menon, National Security Adviser and former Foreign Secretary, is being published here thanks to Cmde. Uday Bhaskar, former Director ISDA and NMF.)

Dr. Sanjay Baru, Mrs Subrahmanyam, (whose birthday it is today), Cmdre. Uday Bhaskar, ladies, gentlemen and friends,

I thank the Subbu Forum and the IIC for doing me the honour of asking me to deliver the first memorial lecture in memory of the late K. Subrahmanyam, (KS), a towering

figure, a teacher to many of us, and someone who was central to debates on India's national security for over half a century.

This lecture is also a responsibility because of the very high standards of intellectual rigour and analysis that KS set in his lectures and writings. Many of you present here knew KS well. His intellectual sharpness was awe inspiring until you understood that it was an expression of his dedication to his craft and to the power of reason, and hid a sensitive appreciation of others beneath that forbidding exterior. Today every think tank in India which concerns itself with strategic affairs has people who worked with KS and whom he mentored. He combined those qualities of mind with personal courage, which became evident when he was on an Indian Airlines aircraft which was hijacked.

But I am not here to recount KS' life or his intellectual struggles with orthodoxy and political correctness in matters of national security.

Instead I would like to consider what K Subrahmanyam stood for in his professional life and the areas where he enriched our strategic culture. Let us first look at Indian strategic culture itself. Thereafter we might look at how KS changed the way, that we in India look at some major security issues. And finally I will speculate on what would concern KS if he were looking at the world today

1) India's Strategic Culture

We often hear statements alleging that India lacks a strategic culture. Sadly this is more often heard from Indians than foreigners. One sometimes wonders whether the idea that India lacks a strategic culture was not useful in the past to those who did not wish to see India's weight translate into the effective exercise of power on the international stage. While one can understand foreigners spreading this idea, it is incomprehensible to me that some Indians should also believe this and still propagate this idea.

The most cogent expression of this idea was by George Tanham, a senior defence analyst at Rand Corporation in the early nineties. Frankly speaking, for a civilisation and state like India not to have a strategic culture is impossible. It is like someone claiming to be apolitical, which itself is a political choice. Many others see in India a strategic culture that is "more distinct and coherent than that of most contemporary nation states", according to Rodney W. Jones.

What is strategic culture and how can foreigners and Indians draw such diametrically opposite conclusions about

India's strategic culture? As I have said before, the most comprehensive (but incomprehensible) definition I have seen is that: strategic culture is that set of shared beliefs, assumptions and modes of behaviour, derived from common experience and accepted narratives (both oral and written) that shape collective identity and relationships to other groups, and which determine appropriate ends and means for achieving security objectives. Or, to put it more intelligibly without the academic jargon, strategic culture is an identifiable set of basic assumptions about the nature of international and military issues. This would involve both a central strategic paradigm (about the role of war in human affairs, the efficacy of force, the nature of the adversary, and so on), and a grand strategy or secondary assumptions about operational policy that flow from the assumptions.

By this definition, of course, we in India have a strategic culture. It is an indigenous construct over millennia, modified considerably by our experience in the last two centuries. For instance, war and peace are continuing themes in Indian strategic culture. While not celebrating war the culture treats it as acceptable when good fights evil. Indian strategic culture has been comfortable with this contradiction. Both major Indian epics deal with wars, and treat rivalries as natural and normal. Kautilya addressed the use of force in detail. While Gandhiji shunned the use of force and opposed violence in politics he was politically steely and unyielding, and accepted appropriate violence as unavoidable in certain circumstances. As a result of this acceptance of contradictions, Indian strategic culture supports ethical views that dovetail easily with international norms of conduct whether legal or on human rights, so long as they respect India's status. The traditional culture also has a strong pedagogical bias which is reflected in the way India chooses to negotiate, and in the attendant risk that any external compromise is seen domestically as surrender. One of the best descriptions of India's contemporary strategic culture is by Kanti Bajpai who pointed out differences between 'Nehruvians', neo-liberals and hyper-realists, stressed what is common to all three streams of Indian strategic thought, and described how they might differ on the best means but not on India's external goals. To summarise Bajpai, all three streams agree on the centrality of the sovereign state in international relations and recognise no higher authority, see interests, power and violence as the staples of international relations that states cannot ignore and think that power comprises both military and economic capabilities at a minimum. Beyond this they differ on the best strategy and means to be adopted.

For 'Nehruvians' the natural state of anarchy can be mitigated by understandings between states, and to make preparations for war and a balance of power central to security and foreign policy is both ruinous and futile. For neoliberals mutual gain is a conditioning factor for the natural state of anarchy between states, particularly as they become interdependent. They therefore see economic power as a vital goal for states, to be achieved by free markets at home and free trade abroad. The hyperrealists are however pessimistic and do not believe in transformation, only endless cycles of inter-state threat, counter-threat, rivalry and conflict, where the risk of war is only managed by the threat and use of violence. For them the surest way to peace and stability is the accumulation of military power and the willingness to use force.

For Bajpai, relations with the USA provide an example of how this works in practice. All three streams recognise the USA as the only superpower and of real significance to India, and agree that it is no military threat to India but that it is a diplomatic threat at times with US policies affecting India collaterally, particularly in the region. Nehruvians see the USA as an imperial power that must be contained and cannot countenance any rivals, and they therefore seek multilateral answers to the preponderance of US power. On the other hand, neoliberals take the opposite view, stressing how essential the USA is for India's own development, and believing that the US can be supportive of India's views and aspirations. Hyperrealists differ from both, arguing that the only way to build India into a military power of the first rank is to work with all those who might help, like the USA, but to realise the limits of that cooperation and its limited utility for India's security.

The elements of Indian strategic culture are evident in what is common to all three streams, Nehruvians, neoliberals and hyperrealists. The same elements are also evident in earlier Indian writings on statecraft, whether in Kautilya, the Mahabharata's Bhishmaparva, or even in Ashoka's edicts. All regard the international system as anarchic, and see international relations as fundamentally power relations. In the practical application of that culture therefore, all three of today's Indian schools believe that nuclear weapons are essential for India's security in a world that shows no signs of moving to their abolition and elimination, and which is inhabited by threats to India's security.

It is this common strategic culture that we inherited, first clearly expressed and adapted for modern times by Prime Minister Jawaharlal Nehru, which explains the substantial agreement on values, on goals and even on

means in our foreign policy, despite marked and rapid changes in the external environment in which we have operated. That is why the core traits of our foreign policies have persisted since independence, irrespective of the parties in power. Our goals have stayed constant even as the means available to us have increased and as the world around us has become more complex and more linked to our own development.

For instance, our actions in 1971 should have been no surprise to anyone who had bothered to study our strategic culture. Both our major epics, the Mahabharata and the Ramayana, are about wars and treat them as natural and normal, not celebrating them but as necessary instruments of statecraft, justified when good fights evil. This says something about war and peace as themes in our strategic culture.

We are sometimes asked how the non-violent land of Gandhi could do what we did in 1971. As Gandhiji himself said in "The Gita and Satyagraha",

"I do believe that when there is only a choice between cowardice and violence, I would advise violence. Thus when my eldest son asked what he should have done, had he been present when I was almost fatally assaulted in 1908, whether he should have run away and seen me killed or whether he should have used his physical force which he could have wanted to use, and defend me, I told him that it was his duty to defend me even by using violence..... I would rather have India resort to arms in order to defend her honour than that she should, in a cowardly manner, become or remain a helpless witness to her dishonour."

In saying so Gandhiji was expressing ideas and a political rationalism whose roots one can trace back to India's ancient history, to Kautilya or Ashoka, whichever you prefer.

KS' Contributions

It would be clear from this brief description of Indian strategic culture that KS stood squarely in a long tradition of thought and attitudes, but applied it creatively to the vastly changed circumstances of the second half of the twentieth century and the last decade. That his ideas faced resistance because they were new was natural. But so was their ultimate acceptance as orthodoxy, since they implicitly were a development of a long tradition of Indian strategic thought.

Let me try to list some of the more significant contributions that he made to Indian strategic thinking and

culture. Five aspects in particular struck me as significant and relevant today.

“Bomb-mama” and our Nuclear Doctrine:

When KS began speaking of the need for India to build a nuclear weapon as the most cost effective solution to our unique situation, his was a lonely voice in India. It took years of steady and unrelenting argument and persuasion, (and, quite frankly, the actions of the NWS’) for his ideas to be widely accepted. He persuaded us of the idea of nuclear weapons as political rather than war-fighting weapons. And when we did conduct nuclear weapon tests in 1998, it was natural that it was to KS as Chairperson of the NSAB that we turned to articulate the doctrine that governs the use and control of India’s nuclear weapons. (Pakistan, who tested soon thereafter, has yet to articulate its doctrine, which says something about the different strategic cultures at play in the sub-continent.)

It is easy to underestimate the significance of what KS did to teach us how to think about nuclear weapons in a democracy. The ideas that Indian nuclear weapons would only be used in retaliation, that they would remain firmly under civilian control, that deterrence required massive retaliation and therefore assured survivability creating a second strike capability, were all first articulated by KS. Today we take them for granted.

He also maintained the link with our traditional emphasis on disarmament, making it clear that it was because our security was threatened and the other NWS’ had not responded to our calls for general and complete nuclear disarmament that we were compelled to weaponise, and that we remained willing to disarm under legally binding commitments and timeframes accepted by all the NWS’ along with matching commitments from the NNWS’.

We also owe to KS, the very vocabulary that we now use in discussing India’s nuclear weapons programme. When KS began writing in public on the subject, the vocabulary of nuclear weapons policy was that created and developed in the context of the nuclear arms race between the US and the Soviet Union. Its relevance to the Indian, or for that matter the Chinese, situation has always been limited. (In 2006 Chinese and US arms control experts realised after decades of talks that they needed a mutually agreed bilingual glossary to minimise misunderstanding. It took eighteen months to reach agreement on 1,000 terms relating to nuclear security. But there was still no consensus on key concepts like “limited deterrence” and

“minimal deterrence” or “deterrence” itself!!) In our case, we are still in the process of developing our own vocabulary and concepts, building on the work of the pioneers.

Defence and Development:

When KS first began to write on defence issues in the sixties, the conventional wisdom was that every rupee spent on defence was a rupee snatched from development or feeding our people. The ‘guns vs. butter’ argument was natural in a country where government and individuals were poor and hunger was rampant. KS was one of the few after Sardar Patel to argue that economic development needed a sound defence as a prerequisite. He also went on to argue that the economic spin-offs from defence spending were not inconsiderable in terms of growth and technological independence. He had a vision which was rare for that time, of what defence as a sector could mean to the national economy, driving technological modernisation and growth by providing non-inflationary consumption. That we have not yet realised that vision in practice, despite exponential growth in resources available for defence, is not because his ideas were faulty but because they were never implemented. This debate on defence and development is one that still continues and is unsettled to this day.

National Security Structures – The Kargil Review Committee and the GOM:

If India was the first parliamentary democracy to attempt to harness the advantages of a National Security Council system, and has constructed structures for this purpose in the last ten years, many of the initial conceptions and ideas can be traced back to KS’ writings and those of his generation. A lifetime worth of thought was compressed into the Kargil Review Committee’s report and many of those recommendations were later adopted by the GOM.

Strategic Autonomy in thought and deed:

The one thread that ran through all of KS’ writings was the need to increase India’s real strategic autonomy. By this he never meant cutting ourselves off from the world. He realised that this would doom us to eternal technological mediocrity and leave us vulnerable to even minor threats. Instead he envisaged India working with other countries as equal partners, as an active participant in the shaping of international outcomes and, ultimately, the international system itself. For him, non-alignment was a strategy, not an ideology. As a flexible realist he responded to changes in the international situation facing

India: In the sixties he advocated India reaching out to the US; post-1971 he was a strong advocate of the Indo-Soviet relationship; after 1991, and particularly after 2005, he was impatient with our tardiness in grasping the strategic opportunities that he thought had opened up for India.

This was not mere opportunism. He was a strong nationalist, rejecting US conditionalities for military assistance after 1962; driving hard bargains with the USSR as Secretary Defence Production in 1979; and, resisting policy choices that would have constrained our nuclear options in the seventies.

Values in National Security Strategy; Realism-plus:

What made KS' realism different from the common or garden variety of Western realism was his ability to combine a strong commitment to the basic values of the Indian Republic, (of secularism, democracy and pluralism), with his realist pursuit of national interest. I suppose one could call this the "realist-plus" approach. He was an advocate of value based relationships with the US and others on democracy, with Russia on secularism, and with Europe on liberalism. He often argued that there was no real contradiction between the promotion of democracy and the pursuit of India's interests in our neighbourhood. I remember heated discussions in the JIC when KS was chair in 1977-78. The example used by both sides of the argument was Pakistan, where democratic governments had been well-meaning but ineffective while military regimes had promised delivery but presided over a basically unsatisfactory relationship with India. It is an argument that still resonates in India today. but there was no question where KS stood on this defining issue.

KS argued that the values in the Indian Constitution – secularism, pluralism, democracy and quasi-federalism – were imperative to hold India together in the 20th century. India is alone, along with the USA in an earlier age, in seeking to industrialise and accumulate power as a democracy. All the other major nations of the world industrialised and gathered power before they became democratic. KS felt that this was why the rise of India, like the 19th century rise of the US, would not arouse the concerns, conflicts and reactions that the rise of other powers throughout history have provoked. For him it was and remains a matter of India's self interest to help to build a democratic, pluralistic and secular world order.

To my mind, perhaps the greatest contribution that KS made to intellectual discourse in India was to bring us back to the Indian realist tradition, one of the few realist

traditions in the world that has a place of pride for values. KS' writings and work re-taught us how to think strategically. He taught us that strategy is not just about outdoing an adversary who is trying to do the same to you. It is also about finding cooperative solutions and creating outcomes in non-zero-sum situations, (which are most of our lives), even when others are motivated by self-interest and not benevolence. Strategy is the art of creating outcomes that further your national interest and values, and includes putting yourself in others' shoes so as to predict and influence what they do.

The measure of his success is the extent to which these ideas are now commonly accepted and no longer strike us as extreme. Not very long ago, in the living memory of my generation, this was not so.

KS' Concerns Today

What would have concerned KS today?

Shortly before he died KS sent me four papers that he was working on. One was unfinished and the others were unpolished. The papers were nothing if not ambitious and magisterial, as one would expect from him. They were on an Indian Grand Strategy for the first half of the 21st Century, Indian Defence Policy, Nuclear Deterrent in the Indian Context, and India in the 21st Century. I do hope the KS Forum and the Subrahmanyam family will see their way to publishing these papers.

Reading these papers today, when uncertainty in the international system is at unprecedented levels and as we seem to be entering a new phase of the world economy, one is struck by how his "realist-plus" perspective seems best suited to describe what we see around us, and to chart a course forward. We are in a world where there are few certainties, where coalitions form around issues and alliances are permeable, where power is increasingly shared but unevenly among several major powers, and where conflicts are asymmetric. This is a world with which the Indian state system was familiar for most of our pre-modern history, a world where Krishna, Bhishma and Kautilya would all feel equally at home. So it seems logical that we should return to our strategic culture as made modern by thinkers like KS to seek answers to the questions we face.

Conclusion

If India is to deal with the issues of the new twenty-first century world, it is essential that we further elaborate our own culture and tradition of strategic thought. So long

as India's situation and needs are unique, we must encourage our own ways of looking at developments, and develop our own strategic culture, vocabulary and doctrine. To do so would be appropriate tribute to KS. Fortunately for us, there is no isolationist streak in our strategic thought so far, and we have a rich tradition to draw on. Ironically, the greater our capabilities, the more we need the world and are integrated into it. So, if anything, the need for and the rewards of studying our strategic culture will grow with time.



'STRONG FOREIGN POLICY NEED OF THE HOUR, SAYS FORMER DIPLOMAT'

'Individual whims and fancies cannot take precedence over a system'

(Newspaper report on the lecture delivered by former Ambassador, Shri.K.P.Fabian, IFS Retd., on Feb 17, 2012 at a meeting jointly organised by Centre for Policy Studies and Visakhapatnam Regional Chapter of National Maritime Foundation.)

Former ambassador to Finland , Qatar and Italy, K.P.Fabian said that India as a country lacked a basic structure for formulation of long-term foreign policy other than what was initiated by India's First Prime Minister - Jawaharlala Nehru and M.K.Gandhi.

Speaking on the subject, India's Foreign Policy : The Big Picture, at the lecture organised jointly by the Centre for Policy Studies and the National Maritime Foundation at the Public Library, here on Friday, he said that the country lacked a system wherein the foreign policy was evolved based on discussions by stakeholders in a brain-storming session involving the civil and defence officials. "Regrettably, individual whims and fancies took precedence over a system of evolution of policy which did not exist. Governments would come and go but a strong foreign policy foundation with a national outlook is the need of the hour," he said.

'No foresight'

The former ambassador dwelt on past experiences of our country's foreign policy which reflected inconsistency, lacking in foresight and devoid of long-term vision and betrayal of national interests in some cases. Mistakes were made with regard to policy formulation towards Iran and in the process national interests with regard to laying of pipeline from Iran to India touching Pakistan had been affected.

A proper analysis of repercussions of the country voting against Iran had not been made. Similarly, we had failed to fathom the designs of China with regard to their claim over Arunachal Pradesh, he said. Chinese still consider Arunachal Pradesh as a part of their territory by calling it Southern Tibet. Indians who apply for a visa from that State to visit China were told that they needed no visa as it is part of their territory. A blind policy of 'India-China Bhai Bhai' was followed and Chinese aggression opened our eyes belatedly.

Defining that foreign policy is one that should protect national interests, Mr.Fabian cited the example of Union Carbide which offered a mere \$ 470 million as compensation to the Bhopal gas tragedy victims against the demand made by India for \$ 3.03 billion. "This is a clear case wherein our country's interests could not be protected."

Soft-peddalling

On the 26/11 terror attack in Mumbai, our country's policy in still negotiating with Pakistan on punishing the culprits is under attack. Our policies on several issues appeared to be soft-peddalling, lingering and confused with regard to our articulating our stand. He maintained that our failing to see the writing on the wall with regard to fall of Hoshni Mubarak of Egypt and Libyan President Gadaffi and our assessment of things were wrong. He felt that there should be a strong US presence in the East Asia to check the hegemony of China.

(Courtesy: The Hindu Feb 18, 2012)



INDIA'S DEFENCE BUDGET - SINGULAR LACK OF STRATEGIC VISION

- Cmde C. Uday Bhaskar (Retd.)

Former Director, National Maritime Foundation,
Ex-Director, Institute for Defence Studies and Analyses,
New Delhi

The Indian defence expenditure for the financial year 2012-13 has been budgeted at a fairly high figure of Rs.193,407 crore (budgeted expenditure, or BE) which converts to \$38.5 billion and is not unreasonable but is well below China's corresponding figure of \$100 billion. However, to get a true sense of how this translates into tangible Indian military capacity, this allocation is to be seen in relation to the revised expenditure (RE) for the last fiscal

that was announced as Rs.170,937 crore (\$34 billion). The increase thus is of the order of 13 percent from the actual amount spent in 2011-12.

However, this is only one perspective, for the BE for 2011-12 was Rs.164,415 crore (\$32.7 billion) and this was revised by over Rs.6,000 crore to reach almost Rs.171,000 crore. The Indian defence expenditure is broadly divided into two heads - the revenue and capital components - with the latter accounting for acquisition of new equipment and inventory items, as also modernisation of existing platforms. Ideally, a 50:50 ratio, or even a marginally greater amount for the capital head, would be the most desirable norm - but in the Indian case, since the military machine is largely manpower intensive, the opposite pattern prevails - meaning that the revenue component is higher.

Thus for the current fiscal, 2012-13, the total revenue expenditure is budgeted to be Rs.113,829 crore, while the total capital outlay is pegged at Rs.79,578 crore. Paradoxically, in the last fiscal, 2011-12, the capital expenditure was planned for a total of Rs.69,199 crore - but the actual expenditure as announced in the budget documents presented on March 16 was of the order of Rs.66,143 crore. In other words, the defence ministry surrendered Rs.3,056 crore as unspent from its capital head - and this is reflective of the inability to arrive at swift and objective decisions that will contribute to laying a strong foundation for capacity-building of the Indian military profile.

But then the question that arises is where did the increased expenditure occur over the last year? The increase from BE to RE for the last fiscal, 2011-12, is of the order of Rs.6,522 crore and this was expended in the revenue component, which along with the unspent capital amount of Rs.3,056 crore offers an insight into the trends that characterise India's defence expenditure.

The lack of a clear strategic focus is evident when the spending pattern of the last decade is examined in some detail. On the one hand, the revenue expenditure is closer to 60 percent against the capital head, even when allocated amounts remain unspent - except in the last fiscal - which was an exception to the general trend. The lack of a strategic underpinning is evident when a very anomalous situation obtains, in that capital funds are returned as unspent when the Indian military across the board is in dire need of modernisation of critical equipment and platforms.

For instance, the Indian Army has been seeking to replace the old Bofors gun - the mainstay of the artillery

for well over a decade -- but to little avail. Given the kickback allegations and related political scandal going back to the Rajiv Gandhi years (mid-1980s), the Indian higher decision-making system remains inert or is in eternal slow motion. Thus 25 years after the Bofors scandal broke and a decade after the Kargil War, the Indian Army is yet to get a replacement for its artillery gun.

Decision-making remains paralysed since the major political parties have chosen to attack one another over corruption and transgression issues - from Bofors to coffin scams - and as a result, India's military capacity has glaring gaps. Defence expenditure and budget allocation is held accountable to strict compliance with audit regulations and fear of politically-motivated investigations and hence no senior official in the Ministry of Defence wants to take long-term decisions that will benefit national military capability-building.

India's total defence allocation can also be viewed in the regional context -- while the current allocation for this year is closer to \$40 billion, the Chinese defence budget announced recently is closer to \$100 billion. While India does not seek equivalence with China, the pattern of defence allocation and the priorities set by the political leadership is a contrast.

Since the end of the Cold War in 1991, Beijing has set itself the task of acquiring credible indigenous design and production capabilities in the defence and military domain - and also utilised its domestic industrial base to advantage. India, on the other hand, has the dubious distinction of becoming the world's leading arms importer over the last decade. Much of the funding from the capital head goes to foreign suppliers and over the last 20 years, Indian funding has proved crucial to the very survival of certain defence industries, first in Russia and now in France.

It is regrettable that the defence expenditure is rarely discussed in parliament despite being a reasonably large amount and where debates do occur, they are zero sum games between bitter political opponents.

It merits recall that over the last decade, two high-powered committees have rendered their reports - the Kelkar and the Rama Rao panels - about the challenges to India's acquisition procedures and the need for a rigorous defence public sector/DRDO review. However, both reports remain shrouded in secrecy - and have not come up for detailed discussion in parliament or in the national trade and commerce chambers.

If examined in an objective manner, where everyone

is a stakeholder in contributing to national security, some embarrassing truths will be revealed. More than 60 years after becoming a republic and 50 years after the debacle with China, the opaque Indian defence production establishment does not produce high-quality clothing and personal inventory items like boots - let alone a suitable rifle for a one million army, or tanks and aircraft. The question that Defence Minister A.K. Antony may like to ask is why the stoic Indian jawan still buys his uniform from the market and shuns what the government provides?

Fiscal allocations by themselves tell a partial story. Creating appropriate military capacity requires a certain degree of political commitment and institutional integrity that appear elusive in the Indian context.



THE NUCLEAR GENIE-1 THE GENIE OUT OF THE BOTTLE

- Prof.M.N.Sastri

“A discovery is said to be an accident meeting a prepared mind” observed Nobel Laureate A. Szent Gyorgi (1893-1986), the discoverer of Vitamin C. The phenomenon of radioactivity exhibited by uranium and thorium is an example of an accidental discovery by Antoine Becquerel in 1896. This was followed by many vital discoveries that had far reaching implications. These include

- Discovery of new radioactive element radium and polonium by Madame Curie
- Identification of energetic alpha, beta and gamma radiations from radioactive elements (1899)
- Nuclear disintegration theory of Rutherford and Soddy (1902)
- Discovery of isotopes (1909)
- The structure of atom proposed by Rutherford and refined by Bohr (1913)
- Artificial transmutation of elements by Rutherford (1917)
- Discovery of the neutron by Chadwick (1932)
- Discovery of artificial radioactivity by the Joliot-Curie couple (1933)
- Discovery of the fission of uranium nucleus by neutrons by Hahn and Strassmann (1938)
- Prediction and confirmation of release of large energy in fission by Frisch And Meitner (1939)
- Prediction by Bohr that fission was due to the isotope of uranium with mass 235 which is present at a concentration of 0.72% in natural uranium-238.

While the world knew very little about these ongoing investigations, the radioactive decay of elements like Uranium, Thorium and Radium attracted the attention of H.G. Wells, considered as the “Father of Science Fiction”. He concluded that while the rate of energy release in radioactive transformation is small, the total amount of energy released is huge. Using this logic, Wells in his monumental book “The World Set Free” published in 1914, predicted that the Uranium atoms would eventually split, yielding huge energy, which could replace the steam engine in electricity generation. He forecast the operation of a commercial nuclear power plant in 1953. He even predicted that the scientists would construct “atom bombs” from an artificial radioactive element, which he called Casolinium, and that when these atom bombs are dropped on cities by warplanes, they become raging volcanoes that devastated everything for miles. Interestingly the pioneers in nuclear studies ruled out such a possibility. Rutherford observed, “Anyone who expects a source of power from transformation of these atoms is talking moonshine.” Albert Einstein compared particle bombardment to “shooting in the dark at rare birds.” Bohr felt that the chances of taming the atomic energy are remote.

Leo Szilard, a Hungarian scientist who fled to England in 1933 to escape the Nazi regime, was inspired by Well’s prediction. He hypothesized that if a nuclear reaction produced neutrons, which cause further nuclear reactions, the transformation might be self-perpetuating, releasing energy. He however did not foresee fission as the mechanism for his chain reaction, since fission was not discovered or even suspected at that time. He filed a patent for his ideas of a simple nuclear reactor the following year. After fission was discovered in 1938, Szilard who by then had moved to the US, joined Enrico Fermi, an Italian scientist who fled Italy. Working at Columbia University, they experimentally established on March 5, 1939 that Neutron multiplication through a chain reaction in Uranium fission was indeed possible. Szilard realized that, as predicted by Wells, it is also possible to use atomic energy to produce bombs. Apprehending, that Germany under Hitler could be already pursuing the assembly of the atomic bomb, he felt that the Allies should forestall Germany in this task. He along with fellow émigré scientists Edward Teller and Eugene Wigner approached Albert Einstein to address a letter to the US President F. D. Roosevelt. In this letter dated August 2, 1939 drafted by Szilard, Einstein explained the possibility of assembling extremely powerful bombs of a new type and one such bomb “might very well destroy the whole port together with some of the

surrounding territory.” Einstein in his letter also expressed his apprehension that Germany may be pursuing the assembly of an atom bomb. This was based on the information that Germany had taken over the Uranium mines and initiated a programme in this direction at the Kaiser Wilhelm Institute, Berlin. President Roosevelt constituted a committee for examining the issue. But there was no overall “sense of urgency” among its members. Only an amount of \$6,000 was provided to Fermi and Szilard to carry out their investigations at Columbia University! With good progress in the studies relating to nuclear chain reaction and exchange of information between American and British scientists the dream of unlocking and using the energy stored in Uranium seemed closer to becoming a reality. With the bombing of Pearl Harbour in December 1941, and Japan and Germany declaring war on the US, and the fear that Germany might make atomic bomb for use against the Allied countries put the US on alert. Scientists who migrated to US moved to Chicago to work on the project. On the morning of December 2, 1942 the world’s nuclear pile liberating energy from Uranium fission through a chain reaction, marking the birth of the nuclear era.

Meanwhile, early in 1942, a team of scientists led by Glen T. Seaborg working at the University of California, Berkeley isolated a new element by bombarding Uranium with Neutrons. The reaction involved the transformation of the abundant isotope Uranium with mass 238. Named Plutonium (the element Casolnium hypothesized by Wells), this element was shown to be capable of undergoing fission chain reaction with several advantages, including easier manipulation compared to uranium-235.

Things began to move fast after Pearl Harbour, leading to the starting of the Manhattan Project in the US with General Leslie Groves of the US Army as its head. Groves had a reputation “as a doer, driver and a stickler for duty.’ He knew how to give orders and how to make people work.

The first problem was the acquisition of Uranium required for the project. The St. Joachimstahl source in Czechoslovakia was not available as it came under German control. The Colorado mine in US did not have sufficient supply. The only source available was the Shinkolobwe mine in Belgian Congo operated by the Union Minière du Haut Katanga under permission from Belgium. Edgar Sengier, its resourceful director, having got an inkling of the potential of the mineral, managed to transport by sea about 1,200 tons of the mineral to US and store it in Staten Island, New York. Groves acquired the entire stock. Other

Uranium supply sources were the US Colorado and the Canadian Great Bear Lake mines.

There was also a windfall of Uranium for the project. In April 1945, a German U-boat-234 set sail to Japan with valuable military cargo. This cargo, among other materials contained about 1,200 pounds of Uranium usable for bomb assembly by Japan. With the defeat of Germany, the commander of the U-boat surrendered on May 12 to the commander of the US ship USS Sutton. Under great secrecy the Uranium cargo was reportedly delivered to the Manhattan Project. The 7.7 pound Uranium-235 content of this Uranium haul is believed to have become part of the Uranium that went into the bomb that destroyed the city of Hiroshima. Ironically, Japan received the Uranium in a form that was not intended.

Work began in three super secret atomic cities- Oak Ridge in Tennessee for preparation of enriched Uranium-235, Hanford in Washington State for production of Plutonium from nuclear reactors and Los Alamos in New Mexico for the design and testing of the bomb. By 1945, the project had nearly forty laboratories employing nearly 200,000 people. The scientists drawn from several countries included 20 Nobel Laureates. The programme cost US\$ 2 billion (\$25 billion present day). Robert Oppenheimer was appointed Director of the Los Alamos unit.

By early 1945, f Uranium-235 from Oak Ridge and Plutonium from Hanford were available in quantities required for the assembly of the bomb. An important requirement was that before detonation, the fissile material in bomb should not assume a size as large as the critical mass. This is because the stray Neutrons present in the fissile material will initiate a rapid reaction in the body of the fissile material which could end up in a premature or fizzy explosion. For this reason the fissile material must be brought into explosion-ready supercritical mass in an extremely short time (a fraction of a mini second) before detonation. Two methods were used, both involving the use of specially made high explosives. These were the gun method and the implosion method. The gun method, which was found feasible for assembling the Uranium device, was impractical for Plutonium. An implosion device had therefore to be adopted for Plutonium. It was further decided to conduct a full-fledged test of the implosion type weapon for establishing its feasibility.

The Alamogordo Test Range in New Mexico was chosen for conducting the test which was named the Trinity test. The name Trinity was believed to have been chosen

by Oppenheimer, who had an avid interest Sanskrit literature, with reference to the Hindu divine Trinity Brahma, Vishnu and Shiva. At 5:29:45 AM on July 16, 1945 the first ever nuclear explosion woke the world. William L. Laurence, the sole official journalist covering the event wrote in the New York Times dated August 26, 1945," And just at the instant there arose, as if from the bowels of the earth, a light not of this world, the light of many suns in one. It was the sunrise such as the world has never seen, a great super sun climbing in a fraction of a second to a height of more than 8,000 feet, rising ever higher until it

touched, lighting up earth and sky all around with dazzling luminosity. Up it went, a great wall of fire, a mile in diameter, changing colours from deep purple to orange, expanding, growing bigger, rising as it was expanding, an elemental force freed from its bonds after being chained for billions of years." The explosion made a hole in the desert half a mile across and melted the sand, which on hardening covered the hole with a sheet of glass.

Oppenheimer rued, "There floated in my mind, a line from Bhagavat Gita in which Lord Krishna is trying to persuade the Prince (Arjuna) that he should do his duty: I am become death, the shatterer of worlds." (11.32)

General Groves in his report said," I no longer consider the Pentagon a safe shelter from such a bomb."

The 15,000 ton TNT yield of the bomb astounded even the scientists who designed and assembled the bomb.



INTELCTUAL PROPERTY RIGHTS AND THEIR STUDY - V

- **Dr R.Vaidyanatha Ayyar** I.A. S. (Retd)
Former Secretary (HRD) to Govt., of India
& Former Professor of Management Studies IIM Bangalore

Whether one likes TRIPs or not, one cannot but admire the brilliant policy advocacy by American industry associations with a strong interest in a strong IPR regime, and the brilliant negotiating strategy of the United States. A study of the policy advocacy and the negotiating strategy offers valuable lessons for us to pursue our national interest in multilateral forums like WTO and WIPO. Similarly, whether one likes or not, policy-oriented research and policymaking have to proceed from the premise that in the Global Era of IPRs, binding global IPR obligations are a historic inevitability. For a long long time economic analysis

of the firm and economic history did not take note of technology. It was Karl Marx who brought in technology in the discourse on economic change by arguing that in acquiring new forces of production (that is technology) men change their mode of production, and that in changing their way of earning their living, they change all their social relations, as well as principles, ideas, and categories. As technological paradigms shift so do modes of production, and so do law, custom and habit. Schumpeter carried forward Marx's economic interpretation of history, and placed technological innovation at the centre of his economic analysis of the firm and industries, and of economic history. In simplistic terms, since the Industrial Revolution, four technological revolutions had run their course, and we are in the midst of the fifth. Each revolution was triggered by the bunching of technological innovations which not only created new products and processes but also together created new growth sectors, and a far reaching alteration of the structure of the economy as well as of society. The first technological revolution, often called the Age of Cotton Textile, Coal and Steam, lasted from 1782 to 1845, the second, the Age of Steel and Railways from 1845 to 1892, the third, the Age of Electricity , from 1892 to 1948, the forth, the Age of Hydrocarbons and the Automobile, from 1948, till about early 1980s. Thus in the last industrial revolution that culminated in the early 1980s, the leading sectors were automobiles, synthetic materials, petrochemicals, and agrochemicals, all based on low cost crude oil and energy intensive material. Each technological revolution is associated with a major shift in the technological paradigm; new shared visions of efficient production and guiding principles of product and process innovation emerge. A technological paradigm conditions technological imagination and thinking. Thus nowadays, if an engine has to be devised no one would think of the use of steam. In all these eras, an economy could organize the production of goods and services either through State enterprises or through private sector or by both as in a mixed economy. Except in economies where the ownership of all means of production as well as production are vested in the State, it is absolutely necessary to have a legal framework that respects property rights, and enables a reasonable rate of returns on investment to be earned. There might be limits on the property rights and profitability in the larger public interest, but property rights and profitability cannot be eliminated all together. The contemporary technological revolution began in early 1980s with custom-made knowledge as the building block of the new technological paradigm. The leading sectors are

likely to be information technology, biotechnology, nanotechnology and new materials; all of these are based on the discovery and application of knowledge much as the leading sectors of the previous industrial revolution depended on low cost and energy intensive materials. The knowledge intensity of products and services in the ongoing technological revolution is expected to be substantially higher than in the previous eras. Thus, the knowledge intensity of contemporary biotechnology based drug discovery is much higher than the conventional hit and run chemistry based drug discovery. The distinctive characteristic of knowledge as the basic building block of the new technological paradigm is that it takes considerable time, effort and investment to develop, apply and commercialise it, but once knowledge is commercialised others can easily access it; and once embedded in the digital medium, knowledge respects no national boundaries and can easily be accessed. The infamous Wikileaks profoundly illustrate this point; the United States government collected voluminous and precious information from all over the world through its extensive network, and yet in no time it became public property of one and all mainly because it was stored and transmitted in the digital domain. It has been said of the revolt against Mubarak in Egypt that the exponentially expanding world of information technologies with goofy names like Twitter and Facebook is now creating permanent instability inside formerly stable political arrangements. The same can be said of IPRs, particularly copyright; way back in 1996, in India, copyright was a placid arena free of the conflicts that characterised patents; the fierce gales of technological innovation had drastically altered the landscape of copyright so much so copyright has come to be more contentious than even patents. There are demands that information wants to be free, and should be set free so that copyright is legally declared to be the right to copy, and anyone can download any digital content without any restriction. In reconstructing IPRs in the new technological era, one cannot ignore the fact that almost all the innovation has to be done by private firms and individuals. There could be exceptions where innovation could be done by the State or through Open Source models of innovation. However, exceptions prove the rule, and legal regimes cannot be anchored in exceptions. To paraphrase what Marx once said only alchemists of revolution can ignore objective conditions: nor can human nature be ignored. Therefore IPR protection in the new era cannot be weaker than in the past. Given that information in the digital domain respects no national boundaries, and that custom-made knowledge based products and services

account for an increasing share of international trade, there is no alternative to have global IPR laws. Marx famously declared that 'the hand-mill will give you a society with the feudal lord; the steam mill a society with the industrial capitalist'. Likewise, the global knowledge-based era would give you a global IPR law.

There is yet another postulate that Schumpeter made. The fundamental impulse that advances public welfare comes from new goods, new methods of production and transportation, new markets and new management patterns. This impulse continually revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one. The process of creative destruction progressively raises the standard of life of the masses by continually making available to the masses an avalanche of new products and services that even kings and queens of yore could not dream of, and by enhancing their purchasing power through continuously enlarging the basket of goods workers could procure for a given amount of labour. In appraising the performance of an industry, it is necessary to go beyond conventional economic analysis which examines whether or not production is maximised, whether price equals the marginal cost, and whether the profit of firms exceeds the return required to maintain their investment at the level required to produce the industry's equilibrium output efficiently. It is very important to examine how well the industry generates dynamic impulses which would incessantly transform it. It is not perfectly competitive markets but monopoly that affords an ideal platform for shooting at the rapidly and jerkily moving targets of new technology; there is therefore no general case for indiscriminate prosecution of everything that qualifies as a monopoly or a restrictive trade practice. Schumpeter had no doubt overstated his case, but the fact remains that it is the prospect of spectacular rewards that induce entrepreneurs to venture into untrodden paths; for every entrepreneur who succeeds and reaps rich rewards, hundreds fail. Given the risk of innovation, the introduction of new methods of production and new commodities is inconceivable with perfect competition which envisages free entry of firms in an industry, and does not provide for rewards for undertaking risky investment in innovation. Technological innovation requires that the entrepreneur has the time and space to garner rich rewards for his risky venture. An entrepreneur exploits what he creates, and is entitled for protective measures like patents to appropriate the fruits of his efforts. This fact might be unpleasant but is a fact of life which IPR regimes cannot ignore. To discuss IPRs from a social

perspective without juxtaposing the imperative of technological innovation and artistic creation, or vice versa, is to be a blind man in the tale of the elephant and the six blind men.

To conclude, it is important, particularly in policy-oriented research, to have a holistic perspective, and not make up the mind and then proceed to gather evidence. Research loses its relevance for policy advice if it ignores the world-as-is and driven by a particular view of the world, or seeks to rubbish points of view with which one does not agree.

1 Comments , if any, could be communicated to the author (rv_ayyar@yahoo.com)

2 The term copyright is used in this article to include what are technically called neighbouring or related rights. The distinction between copyright and related rights arose from the copyright ideology in civil-law countries like which considered that only authors and not firms are eligible for copyright. In this Digital Age the distinction between copyright and related rights is becoming irrelevant as communication, media and entertainment industries are major producers of creations eligible for copyright and related rights.

3 Paul Dirac (1902-84) is an eminent theoretical physicist who was awarded the Nobel Prize in Physics in 1933 for his fundamental contributions to the quantum mechanics and quantum electrodynamics.

4 Julius Robert Oppenheimer (1904-1967) was an eminent theoretical physicist who was scientific director of the Manhattan Project, the American project for the development of nuclear weapons during the Second World War. He was renowned as a polymath who was interested in many things and read literature in original in many languages including Sanskrit. When the first atomic bomb was detonated for testing, he famously recalled the verse from the Bhagavad Gita: 'If the radiance of a thousand suns were to burst at once into the sky, that would be like the splendor of the Mighty One... Now, I am Death, the destroyer of worlds.'

5 Dante (1265-1321) was an Italian poet of the Middle Ages. His Divine Comedy is considered the greatest literary work composed in the Italian language and a masterpiece of world literature.

(to be concluded)



THE ENIGMATIC EMISSARY

- Prof. Manoj Das

(A seer among scholars the venerable Prof Manoj Das who lives in Aurobindo Ashram, Auroville and teaches at Sri Aurobindo International Centre of Education has graciously permitted the publication of this essay from his book My Little India.)

Dr. Dilip Datta gave me an amused smile. 'I took you to be a noted football player heading for Digboi at the instance of our General Manager Kanuga Sahib, an incorrigible sports fan, ' he told me at Dumdum.

That was in the early sixties of the last century. The oil in Assam was still a British enterprise and I was proceeding to Digboi as the Company's guest, though at the invitation of the local Sri Aurobindo Centre.

As I overheard Dr. Datta mention Pondicherry in his conversation with someone else, I grew curious and introduced myself as a Pondicherrian. On the staff of the Assam Oil's sophisticated hospital at Digboi, Dr. Datta was to soon become its chief, the first Indian to occupy that position. (But he was not to stick to it; he joined Sri Aurobindo Ashram at Pondicherry.) We sat side by side in the plane and since that was my first visit to that part of the country, he became my friend, philosopher and guide, introducing me to the glittering peaks of the Himalayan range disappearing and reappearing in the clouds, telling me about the wonder that were Assam and her folks, and bits of the adventure that went with the exploration of oil by the early speculators.

It was noon when we reached Mohanbari, on the outskirts of Dibrugarh. Local friends took charge of me and I was lodged in a guesthouse consisting of a solitary room. My hosts, after entertaining me to an elaborate lunch, assured me that I could enjoy an equally elaborate rest till late in the afternoon. But I had hardly resigned myself to a nap when my doors trembled at some cautious but continuous knocks.

The tall, nervous young man who dashed in the moment I opened the doors and closed them himself behind him, looked like a composition of limbs gathered from several sources alien to one another.

He kept standing even after I offered him a chair.

'Do you happen to be a writer?' he asked in the manner of entering a shop and enquiring if a soap or toothpaste of a certain brand was available.

'Right,' I replied lifelessly.

'But why don't you sit down?'

He obliged me, but with gestures to indicate that his decision to sit or stand hardly depended on my suggestion.

The stranger must be hailing from one of the regions of the northeast, so far as his dress and hair-style were concerned, but his face and figure continued to intrigue me while his English accent impressed me.

'Do you know anything about Rani Gaidelieu?'

I was taken aback, though I tried to hide it. The Rani, alas, was the hub of numerous sensational stories. 'I know whatever the newspapers carry.'

'You know nothing.'

'She is the leader of a certain tribe among the Nagas.'

'You know nothing.'

'She demands a state for her people.'

'You know nothing.'

'I gave up. The visitor smiled. At once the ominous air in my room changed for an easy one. I felt he was not rude or arrogant. He was just simple and spontaneous. 'Should you wish me to know what I don't know about the Rani, you are welcome to help me to some literature on her.

'All the books and articles on her are trash,' he said. 'The Rani is not a leader of the Nagas, but a goddess. It is, their liberation that she desires, not a mere state for them.

'I see!'

'You see with a touch of sarcasm. But I am stating facts and nothing but facts. Now to the point. We want an authentic account of her life and mission to be written. Will you condescend to do that? We will take you with us. You will be explained things. Then you will write. We will bring you back here or leave you at Gauhati if you please. Is this acceptable?'

'Acceptable in principle. How long do you think the project will take?'

'At least a week. You are welcome to prolong your stay.'

'Sorry I was thinking in terms of hours.'

My visitor stood up with a jerk. 'Are you willing for five days?' 'Sorry. I must leave for Digboi tomorrow in the afternoon. Then, I must be in Calcutta . . .'

'Thanks. Don't tell anybody about my meeting you.'

'Whom did I meet? Do I know it myself to be able to tell others?'

'That's immaterial.'

'Do you belong to the Rani's sect? What's wrong in revealing your identity? You did not propose anything objectionable!'

He had no patience for a dialogue. He went out as hurriedly as he had come in. I followed him to the verandah. His motorbike was parked some half furlong away. He pushed it forward for a while and jumped onto it in the manner of riding a horse.

Probably he would not like anybody to know that he had failed in his mission.

He inflamed my curiosity about Rani Gaidelieu and I read Nagapath by Ursula Graham Bower (John Murray, London, 1952) and years later Naga Land: The Untold Story by S.C. Dev (1988).

There was a prophecy in vogue among a section of the Nagas that one day a messiah would lead them to an easy victory over the British and would become their king. One Jadunang proclaimed himself the messiah-cum-Raja and enjoyed the tribe's allegiance. He even invented a new faith, a combination of Hinduism, Christianity and tribal rituals. He needed money and his followers supplied it in plenty.

He would have continued to bask in the glory of a postdated victory over the British but for an unfortunate incident. Four wealthy Manipuri merchants who entered his region disappeared without any trace. One day, one of the Raja's lieutenants, caught up in a quarrel with a rival, threatened to despatch him the way they had despatched the Manipuris. He exhibited some hair stiched to his garment - as mementos of their victims.

The authorities were informed. Investigation led to discovery of the remains of the lost merchants. Jadunang and his accomplices were apprehended and captured through a process that turned violent resulting in the killing of several men as well as the Raja's pet python. The Raja was tried and hanged. His cousin and consort, Gaidelieu, was let off because of her young age. But she

metamorphosed into a deity in no time. Soon she became a menace and kept the administration on tenterhooks. Whoever informed the police about her movement was strangled.

She gave police the slip again and again, reinforcing the legend that she could disappear and appear at will. Once on her assuring people of a village named Hangram that she had magically made the police bullets ineffective, the villagers charged at an outpost and got killed. Soon thereafter the police managed to surround her hideout.

They found her sentries drunk, for, primed with wrong information, everyone had been celebrating their supposed security. The sepoys swarmed over the palisade and surrounded her house, but when she began to shriek spells and call on her bodyguards to resist, the men who composed it laid down their spears and surrendered, and it was left for the sepoys to go in and pull her out, screaming, scratching and kicking and inflicting the only casualty on the expedition by biting a Naik severely in the thumb. A few hours later she was telling Mills that it was very hard work being a goddess people wanted to worship her night and day, and she never had time for a bath. So she had her bath, in the rest-house, with sentries at every exit; and the goddess, queen, and terror of the Kacha Nagas, the elusive sorceress, the evasive divinity, went off to Manipur and trial - and a sentence of fourteen years for abetment of murder.”
-Nagapath by Ursula Graham Bower This strange character was ultimately tamed by the courage and tact of one officer, S. C. Dev, the Commissioner of Nagaland.



DRAUPADI - VII

or

(The ultimate Hindu ideal of an impeccable *pativrata*)

- Sri C. Siva Sankaram

The vice of dice-play rendered the *Pandavas* paupers. The malicious plot engineered by Dhuryodhana and his clique gained victory. According to the unwritten pact reached between the Kuru four and *Pandavas* the latter with their queen Panchali had to retreat to a forest to sojourn there for twelve long years. They were banished from Hastinapura. Their status was now akin to that of uncouth commonlings for whom the woods were heaven on earth. There nature enjoys freedom unthreatened by onslaughts of modernity. There the *Muni* breathing within and without Aum, the savage addicted to woman and wine exist enjoying their brand of freedom of movement. Both are far removed from the world of malice and mischief. It

was a singular realm far from the madding crowd. Seldom they poke their nose in another's privacy. They are direct descendants of God. They equally share the universal grace of God.

By the sojourn of the Pandavas with their fiery wife Panchali the forest, called *Dwaitavanam*, became legendary, their stay illumined the *vanam*. The exodus of Pancha Pandavas and Panchali followed by an impressive entourage, highlighted by the inclusion of learned purohibit Dhaumya halted at Dwaitavanam to pitch their tents there to live in sylvan calm. It seems the end of God in causing people pass through the furnace of frequent troubles is to see them transformed into ever alert men of equanimity. The kingly camp gradually adjusted and adapted itself to the rugged environment. Godly were they that they seldom swerved from the path of law to which they were accustomed. Over the years of trial and tribulation, glory and infamy, Draupadi the completest heroine and amalgam of the best of Hindu womanhood acquired undisputed right to be accredited to the state of lasting chastity and unbroken conjugal fidelity and spotless loyalty to Aryan piety. She exhibited tremendous acumen in all the four roles that a Hindu ideal wife was expected to play.

They were responsible family men owing their roots to the famous lunar race. The *Pandava* camp aided and assisted by active and ever vigilant, selfless service of Aryan Draupadi as the high hostess opened their Vanaprastha. A family-man is expected to fulfil his Ashrama Dharma by strict observance of five obligatory sacrifices daily before he takes meal. One of the five is feeding of Brahmins every day. To be above board they followed the rule without lapse. Pennyless and poor they were, they prayed honestly to Sungod as he is the '*Annadata*' to grant an appliance which supplies plenty of food. The appliance is called Sthali which never goes empty. The hot-spur sage Durvasa with his horde of disciples came once. The itinerary lasted three days, they were warmly treated. In this mandatory job's success also Draupadi acquitted herself well. Time for relaxation and rest was in want. It was an un-remitting rigmarole imposed by usage and religious conscientious will to be true to scriptural injunction. Draupadi never sighed against this and several others of this kind. It was an unquestioned legacy duly carried out by Draupadi in the oddest circumstances too. Thus the fondling fond daughter of Drupada opened her account in exile.

(to be continued)



CPS MOURNS FOUNDER A.SANKARA RAO'S DEATH

Tributes were paid by members of Centre for Policy Studies to its founder Mr A.Sankara Rao who passed away on 18th March. It was on Gandhi Jayanti in 1995 that Mr Sankara Rao established the Centre for Policy Studies with the object of providing a forum for the intellectual, the academic and the expert to interact, focusing on issues of contemporary relevance. In an apartment near his house Mr Sankara Rao launched it at a simple function attended by the then Vice Chancellor of Andhra University Dr M.Gopalakrishna Reddi, International President of World Teacher Trust Dr K.Parvathi Kumar, Mr P.V.Ramanaiah Raja founder of Rajalakshmi Foundation, his wife Mrs Yesodha Sankara Rao and Director of CPS Dr A.Prasanna Kumar. Organizing meetings and seminars and bringing out publications and a bimonthly Bulletin have since been the main activities of CPS. Former Ambassador and Vizag Collector Dr Abid Hussain in 1996 and former Prime Minister Mr P.V.Narasimha Rao in 1999 were among those who addressed the Centre. After releasing a book on *Women's Emancipation* brought out by CPS former Prime Minister Mr P.V.Narasimha Rao honoured Mr Sankara Rao at a function on August 6,1999. Mr Sankara Rao and his wife Mrs Yeodha took a keen interest in the activities of CPS which was merged in Gayatri Vidya Parishad in March, 2002. Chairman of CPS Mr D.V.Subba Rao, Governing Body members Mr V.Seetaramaiah, Mr ASN Prasad, Mr M.Varahala Chetty, Mr Kasim Mehdi and CPS Director A.Prasanna Kumar and Associate Director Prof P.V.Sarma were among those who lauded Mr Sankara Rao's vision and services to the city and conveyed their grief to the members of the bereaved family.

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