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Contents

Experts Speak

THE IMPERATIVES OF ELECTORAL REFORMS IN INDIA

Vivek Mishra, Ambar Ghosh

Dissecting the Evasiveness of Inner Party Democracy 9

Shreesh K. Pathak

Some Reforms are Urgent, Cannot Wait Anymore 21

Articles

Neeta Sinha

Psycho-Social Analysis of Challenges Facing India's Smart Cities 33

Archana V. Gopinath

*Perceived Control, Coping and Subjective Wellbeing among
Infertile Men and Women* 45

Jui Shah

The Emerging Blue Economy: Its Development and Future Prospects 61

Biswajit Mohapatra

*Ethnic Communities and Conflicts in North East India: Building up
a Frame work for Conflict Resolution* 81

Sanchita Bhattacharya

Pakistan: Sectarian War Scourging an Entire Nation 87

Reshmi Kazi, Neha Kumar

Thinking the Unthinkable: Cyber Attacks on India's Nuclear Assets 107

Book Reviews**Sitakanta Mishra**

India in Global Nuclear Governance, eds., by Reshmi Kazi and Ashild Kolas, 2019 ... 127

Aashna Shah

Luck Is the Hook by Imtiaz Dharker, 2018 131

Crystal Magotra

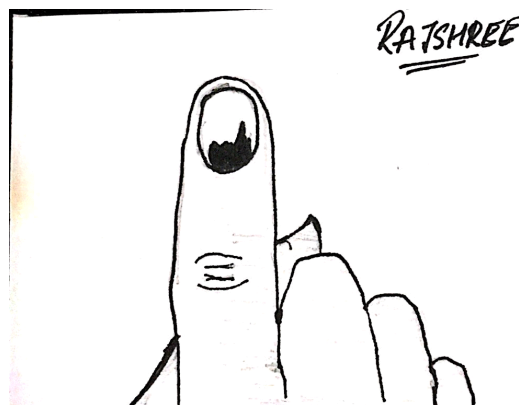
21 Lessons for the 21st Century by Yuval Noah Harari, 2018 135

Experts Speak

THE IMPERATIVES OF ELECTORAL REFORMS IN INDIA

Concept Note

One of the bedrocks of a democratic polity is the conduct of free and fair periodic elections. India being the largest democracy in the world with 900 million voters casting their votes in one million polling stations to choose among 9,000 candidates from 464 political parties for 540 seats in the legislature smooth conduct of electoral process is undoubtedly a daunting task.¹ In the process, many challenges are faced. Keeping in mind the challenges and issues that electoral system in India has faced over the years, in December 2016, the Election Commission of India (ECI) itself has recommended “certain changes that need to be taken up expeditiously to amend certain provisions of law.”² During the

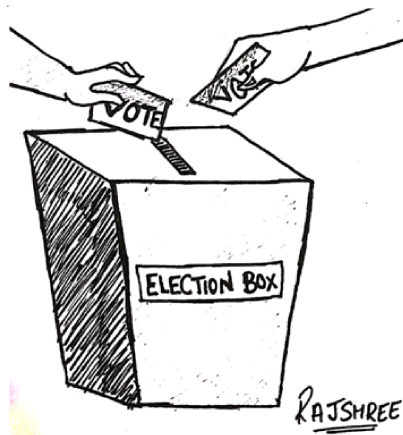


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2. Election Commission of India, “Proposed Election Reforms”, <https://eci.gov.in/files/file/9236-proposed-election-reforms/>, December 2016.

17th Lok Sabha election (2019) process, serious questions have been raised regarding the autonomy or independence of the Election Commission of India (ECI), its work ethics, and procedural challenges it faces in smooth conduct of the voting process. Many, therefore, propagate to initiate swiping reforms in the electoral process, methods, expenses, code of conduct, and the institution at large. If the challenges remain unattended, the trust and confidence of citizens in electoral system of the country can be affected.

The *Liberal Studies* journal invited experts in the domain to ponder over the imperatives and contours of electoral reforms needed in India at this juncture. **Dr Vivek Mishra** and **Ambar Ghosh** argue that despite palpable success in keeping the elements of procedural democracy intact, including the perpetual election cycle, Indian democracy is replete with a plethora of impediments which is indiscernibly enervating the substance that a democratic project entails. One such glaring shortcoming is the lack of internal democratic functioning of the political parties in India. They are doubtful if mere legal regulatory framework would be a sufficient condition to bring about a seismic transformation in the working of the political parties in India. As they rightly conclude, only when the electorate will be conscious enough to understand that democracy is much more than just passively voting in elections at periodic intervals, a holistic democratization of the political landscape in general and functioning of the political parties in particular would be possible.

Dr Shreesh Pathak, on the other hand, categorically views that the ‘election process is not a selection process’. In the selection process, a candidate must fulfill the eligibility criteria set by the selection authority, but in an election people elect their representatives as that suit to their needs at that time. But unfortunately election is slowly being converted as a big manufacturing unit and the political parties have converted themselves as election machines.

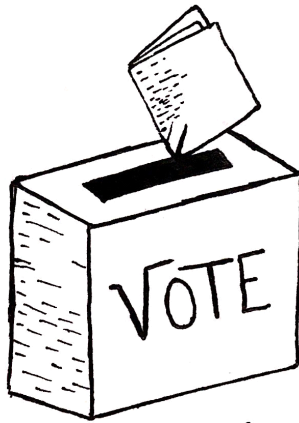


Given the magnitude and intensity of loopholes and challenges affecting the electoral process, India, now, cannot afford waiting for the any electoral reforms. Being such a vast country with such magnificent demographic diversity, India may not be able to hold the democratic values intact in the future, without making some serious efforts for bringing about electoral reforms.

Dissecting the Evasiveness of Inner Party Democracy

Vivek Mishra, Ambar Ghosh*

Indian democracy has acquired a venerable place among the comity of thriving and robust democracies in the world due to its unflinching resilience and almost unhindered continuity. The case of Indian democracy receives accolades and appreciation due to its survival and durability in unimaginably challenging circumstances through history, especially in its peaceful transition of power between sworn rival parties.¹ However, despite palpable success in keeping the elements of procedural democracy intact, including the perpetual election cycle in India, while still guaranteeing civil and political liberties to its



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citizens, Indian democracy is replete with a plethora of impediments which is indiscernibly enervating the substance that a democratic project entails. One such glaring shortcoming of Indian democracy is the lack of internal democratic functioning of the political parties in India.

The Imperative

It must be stated right at the onset why inner-party democracy is critical for the survival and consolidation of democracy in India. It is a no-brainer to understand that the political parties are the most prominent drivers of the political discourse in a multiparty democracy. It is the parties, which provide political leadership, mobilize the electorate during the elections and perform crucial functions like agenda-setting and political propagation based on a wide range of issues impinging on the aforementioned factors. Moreover, the political parties are the organizationally coherent, functional units that compete for capturing state power and hold the levers of power and resources, once they manage to win the popular mandate. Hence, the question that naturally arises is whether the institution, which works as a lynchpin for the democratic order to thrive, is itself truly democratic in its working internally or not. The need for an inner-party democracy that is strictly followed has been reiterated by a plethora of notable political leaders in India.

The recent debate on the pressing need for democratic functioning of the parties was evoked by the incumbent Prime Minister, Narendra Modi.² Besides the political dispensation, a slew of comprehensive reports on electoral reforms in India have emphatically argued in the favor of urgently strengthening intra-party democracy in India.³ But, despite the relentless proclamations and affirmations in its favour, the plight of inner-party democracy in India is embodied in the abysmal opacity that shrouds the working of most major political parties in India. Financial, structural and political ambiguities and lack of transparency pave the way for the emergence of a number of pathological traits that is incessantly weakening the democratic fabric of most of the political parties in India. These pathologies are manifested in the Indian political discourse in four fundamental ways:

1. Manifestations of a Deeper Malaise

First, the glaring dominance of dynasticism in most of the political parties in India strikes at the very foundation of political democracy, whose fundamental principle is equal opportunity in political participation.⁴ While, there is a plethora of political parties whose highest leadership position is perennially controlled by one political family, there are other parties, which have non-dynastic

leadership at its helm but high level of dynasticism among its leadership at the intermediate and lower levels. The strong level of dynasticism can also be traced in the newly elected 17th Lok Sabha which comprises of Members of Parliament (MPs) of which 30 per cent are dynasts.⁵ The deeply entrenched dynastic control in the political parties in India can be attributed to two structural factors; firstly, there is an inherent predilection in Indian society towards dynastic succession in the occupational lineage, primarily owing to traditional veneration of lineage, perpetuation of inequality and consequent lack of opportunity. Therefore, dynastic succession of power appears naturally acceptable to the Indian electorate, despite the ostensible backlash against dynasticism in the wake of the decline of electoral fortunes for the Gandhi family-led Congress party.⁶ Secondly, the political currency attached to names, material resources and patronage remain pivotal factors which guarantee the “*winnability*” of candidates in the complex and volatile political scenarios that Indian elections have to offer.⁷ Under such circumstances, dynastic leaders appear more preferable to the Indian electorate, especially with vast resources at their disposal. This malaise runs deep in every party and political constituency in India, irreparably damaging the scope of equal opportunity in politics.

2. Wealthy Backgrounds of Political Leaders and Bribing

Another prominent manifestation of the lack of inner-party democracy in India is reflected in the extremely wealthy background of majority of the political leaders and intra-party financial hierarchies across most political parties. The very imperatives of a multi-party competitive election process demand large amounts of financial resources for running a successful political campaign, besides buying influence and leverage illegally at the constituency level. The economic prowess of the candidate becomes a necessary, if not a sufficient, condition for ensuring electoral victory. In a society like India, where various inefficiencies and incapacities of the state render depravities on vast sections of the society, particularly through poverty and unawareness, the political parties and the candidates often resort to distributing material goods like cash or liquor in exchange for assurances to votes. Such practices further enhance the salience of wealth and financial hierarchy present in the society in determining the winnability of candidates in political parties.⁸ The lack of any credible regulation on campaign finance in India only bolsters such an unfair political culture, which perpetuates political and societal hierarchies in the country.⁹ The recently concluded 2019 Lok Sabha elections in India further reinforces the prevalence of such practices.¹⁰ Thus, it becomes increasingly difficult for candidates without access to financial resources, recognition of family name and influence to successfully contest elections in India. Hence, the sheer lack of inner party

democracy makes it an almost impossible task for the non-influential and legally credible leaders to successfully get access to the corridors of political power. A number of political leaders rising to the highest echelons of power from humble background still remain exceptionally low in Indian politics.

3. Anti-Social Elements and Criminalisation

The tremendous increase in criminalization of Indian politics is one of the major threats to the health of Indian democracy. Increasing criminalization in politics, to a large extent, stems from the lack of democratic functioning within the parties with the inability to restrain political carders leading to illegal and incriminating consequences. In consonance with the previous point on the salience of money power in politics, the entry of anti-social elements in political parties in India shows the obligatory prevalence of muscle power in politics, which can be viewed from the prism of two functional factors.¹¹ First, the breakdown or fragility of state machinery and the ineptness of state capacities to deliver, creates a power vacuum in many states in India. As Milan Vaishnav states in his seminal work, it is this vacuum that has been filled up by economically powerful individuals with a criminal background, by providing patronage and protection to local constituencies.¹² Secondly, the increasingly violence-prone landscape of Indian politics has made the muscle power a crucial element to ensure survival and sustenance in electoral contests. Thus, political parties feel compelled to induct and give patronage to powerful individuals with criminal background for political expediency, ignoring all imperatives of democracy in general and inner-party democracy in particular.

4. Political Defection and Horse Trading or Party-Hopping

Lastly, the menace of defections and political horse-trading has perpetually threatened the functioning and survival of political parties in India.¹³ It has been a regular phenomenon for the party legislators to resign in order to destabilize the government led by the party of one's present affiliation in order to switch over to the opposition party for more lucrative career prospects. Such convenient cross-overs by the political turncoats facilitate lateral entry of leaders from one party to another which distorts the cycle of internal political mobility within the political parties, which is detrimental to the growth of inner party democracy as well as democratic stability. With the increasing salience of money power in politics and the tremendously aggressive scramble for state resources and defections, political crossovers are rapidly become a leitmotif of Indian politics, further pushing the imperatives of genuine democratic practices into oblivion. In fact, as we write this piece, reports of widespread defections of party legislators in the states of Karnataka and Goa is massively impacting its political landscape.¹⁴¹⁵

Moreover, the Anti-Defection Act of 1985, which is currently in place, is not only inadequate but also counter-productive.¹⁶ The obligatory whip that the act imposes on the party legislators compels them to adhere to the directives of their party high-command in the legislature. Therefore, the discretionary autonomy of the legislators becomes hostage to the whims of the party leadership, once again doing irreparable damage to the principles of internal democracy in the parties.

Factors Hindering Inner-Party Democracy

Institutional Weakness: The failure to consolidate the principles of inner party democracy as the driving force for an effective functioning of the political parties can be attributed to several factors. While personal ambitions and political opportunism at the individual level make it conducive to negate the principle of inner party democracy, there are two fundamentally structural factors that act as a stumbling block in the path of establishing truly democratic parties in India. First, it is the institutional weakness of the political parties that make their organizational structure extremely centralized. This is largely because political parties in India are mostly patronage-based parties, rather than power-dispersed parties.

The parties in India survive on clientelist network, which is strictly controlled, and often revolves around the highest leadership of the party. Such centralization of power thwarts the growth of inner party democracy in most of the political parties.¹⁷ Parties in India witness both dynastic as well as non-dynastic centralization of power. The Indian National Congress (INC) is one of the most widely discussed, often vehemently criticized,¹⁸ national political party which is completely in the shackles of dynastic control of the Nehru-Gandhi family since the last five decades. Despite the INC's illustrious history of emerging as a handmaiden of a broad-based national movement in the Indian freedom struggle, the party degenerated into an extended appendage of the Gandhi family since the times of the former Prime Minister Indira Gandhi.¹⁹

Besides the INCs, Indian political scene is replete with innumerable examples of parties, which function as a family enterprise of one domineering political dynasty.²⁰ Prominent regional parties like Samajwadi Party in UP, National Conference in Kashmir, Shiromani Akali Dal in Punjab, Shiv Sena in Maharashtra, Rashtriya Janata Dal in Bihar, Biju Janata Dal (BJD) in Odisha and Dravida Munnetra Kazhagam (DMK) in Tamil Nadu are only some of the notable examples of dynasty-controlled political parties. Unlike Congress, most of these regional parties with dynastic control are often founded by the family patriarch. Hence, these ruling families are naturally predisposed towards maintaining

dynastic succession in controlling the parties as they view the party as their private political entrepreneurship, thereby denying any leader outside the family, any kind of an access to the highest echelons within their parties.

Devoid of any larger long-term programmatic agenda, these families become the lynchpin around which their parties survive. The habitual obedience and unquestioning authority that these families enjoy in the party, obfuscates any possibility of the emergence of alternative non-dynastic leadership within these parties, which only confers trust on a coterie that is unfailingly loyal to the family. It would be grossly fallacious to presume that inner party democracy only fails to consolidate within the dynastic parties in India. Even non-dynastic parties with coherent organizational structure like the ruling Bharatiya Janata Party (BJP), the left parties like Communist Party of India (Marxist) or CPI(M), fall prey to massive centralization of power that makes it uncongenial for the principles of inner party democracy to strengthen its roots in the party in the true sense of the term. The picture is far more gloomy with the non-dynastic regional parties like All India Anna Dravida Munnetra Kazhagam (AIADMK) in Tamil Nadu, where its leaders MG Ramachandran and then Jayalathitha, enjoyed supreme authority, which has led to mindless sycophancy around them within the party. Other examples include Janata Dal (United) where Nitish Kumar is the de facto power holder; and the Bahujan Samajwadi party (BSP), where its leader Mayawati enjoys all-pervasive control and authority within the party.

Hence, dynastic or otherwise, *power centralization* seems to be inherent in the modus operandi of the political parties in India.²¹ The preponderance of charismatic leadership leads to hero-worship of the leaders and the loyalty to the highest leadership becomes the fundamental prerequisite for the survival of other leaders in the party. Organizational elections within political parties in India are often irregular and remain as mere façade under the strict watch and control of its highest leadership.²²

Asymmetric Political Landscape: Apart from the institutional weakness of these parties, the lack of inner-party democracy should also be attributed to the functional imperatives of electoral politics in India. It is crucial to note that the political landscape of India has evolved as an asymmetric theatre of competition with hierarchies, gaps and divisions. Despite the customary proclamations of inclusive empowerment and high-sounding principles of equal political opportunity, it must be pragmatically acknowledged that the capturing of state power is the ultimate goal of politics. In a democratic polity, winning of elections is the only prerequisite to the corridors of political power. Therefore, the task of electoral mobilization becomes the most crucial project in an electoral

democracy. In India, where the demands of the vast electorate are so diverse, cross-cutting and variegated, the task of mobilizing the people politically becomes a herculean task. Even more so, deprivation and lack of basic amenities and employment remain the hallmark of the majority of people in India. Hence, name, recognition, money power as well as muscle power become highly significant conditions for mobilizing the electorate during the elections.

Therefore, the objective of fulfilling these pivotal requirements for winning the elections naturally remains a greater priority over observing internal democracy for the political parties. As name recognition and brand building remains one of the most fundamental conditions to succeed in politics in India, the parties feel compelled to induct recognizable and notable faces for contesting elections rather than efficient and sincere leaders from ordinary backgrounds. The proliferation of movie stars, dynasts and other celebrities in politics, despite proving to be inept public representatives, is emblematic of how brand making and name recognition of the candidates helps in winning election as it attracts more votes based on popularity and resonates with the electorate easily.²³

Moreover, as the political landscape is turning increasingly competitive, campaign finance is making a game-changing impact over the political fortunes of the political parties. Besides the traditional practices of exchanging cash or alcohol for votes, technology revolution has introduced new platforms for mass mobilization and instruments to connect with the electorate. The use of holograms, media advertisements, social media outreach, cultural and recreational avenues for attracting masses have become crucial tools for electoral campaign apart from holding public rallies and assemblies. In order to avail these innovative campaign tools, parties require financial resources in significantly larger proportions. Increasing reports on how the electrifying election campaign riding on the bludgeoning financial clout of the ruling BJP has left the campaign of the cash starved opposition look lackluster, is a case in moot point.²⁴ Hence, the parties scramble for wealthy candidates, regardless of their criminal background, as incentives for the party coffers, which would facilitate in ensuring spellbinding political campaign.²⁵ Moreover, where glamorous political campaigns do not suffice, electoral malpractices and political violence becomes actual alternative resorts for political parties to ensure electoral victories, therefore legitimizing the dominance of muscle power in politics.²⁶ Hence, the functional prerequisites of politics also do not allow inner party democracy to thrive.

Absence of a Credible Regulatory Framework: It is curious to observe that despite the enormous role that the political parties play in the democratic discourse in India, constitutional and legal regulations to monitor the functioning

of these parties is conspicuously limited and in some instances, non-existent.²⁷ The Section 29 A of the Representation of the People Act 1951 merely mandates the registration of political parties. Hence, the Election Commission of India (ECI) is rendered powerless in ensuring that the political parties conduct fair and regular internal elections for choosing its office bearers.²⁸ In the landmark Indian National Congress versus Institute of Social Welfare Case, the Supreme Court judgment has reiterated that the ECI cannot take punitive action against the registered parties for violating the principle of inner party democracy.²⁹

The political inaction, notwithstanding, there is a slew of recommendations on electoral reforms given by several government constituted committees like Dinesh Goswami Committee, Tarkunde Committee and Indrajit Gupta Committee which strongly argued for more transparent working of the political parties in India.³⁰ The 1999 Law Commission Report strongly recommended the introduction of a regulatory framework for governing the internal structures and inner party democracy of the political parties.³¹ Even, a draft; Political Parties (Registration and Regulation of Affairs) Act, 2011 was submitted to the Law Ministry which envisaged the creation of an Executive Committee for every political party whose members would be elected by the members of the local committees of the state units of the party, who themselves would elect the office bearers of the party from amongst themselves, without accepting any nomination.³² But, any significant development in making it legally binding for the parties to strictly observe internal democracy in its functioning has not been initiated by any political party or ruling coalition in power so far.

Democratising the Drivers of Democracy

In order to ensure an effective legal regime to guarantee genuine adherence to the principle of inner party democracy in India, the two fundamental factors – institutional as well as functional, which impede the consolidation of democratic culture in the parties, needs to be adequately addressed. One needs to be mindful of the fact that the menace of centralization of power that has a corrosive influence on the internal democracy of the parties, cannot be done away with, by only ensuring free and fair organizational elections in the parties. Such efforts should be complemented by other commensurate measures in order to ensure that the cascading impact of money and muscle power and rampant defections and crossovers can be effectively mitigated. But, it is highly improbable that the incumbent political leadership of parties in India, who are the biggest beneficiaries of such shortcomings in the electoral system, would genuinely initiate any meaningful step for ushering in robust electoral reforms.

Therefore, any momentous landmark legislation in advancing the goal of equal opportunity for political participation in India seems difficult to perceive

in the near future. Rather, it is the non-elected apex judicial body, the Supreme Court, which has till now issued a number of advisory recommendations in the path of such electoral reforms.³³ It is for the interest of advancing the substantive objectives of Indian democracy that the Supreme Court must step up its jurisdiction in order to make a leeway for initiating structural reforms in the functioning of the party as well as in the conduct of the election campaign under the efficient watch of another non-elected body, the ECI.

However, it is of pivotal importance to take cognizance of the fact that mere legal regulatory framework would never be a sufficient condition to bring about a seismic transformation in the working of the political parties in India. As the electorate remains the fulcrum of political vicissitudes in a democracy, a change in the psyche and the views of the people worldwide would be the biggest facilitator of any such reform. If the electoral salience for such reforms increases amongst the people, the parties would gradually but definitely feel pressurized to mend their ways. The element of sycophancy for “branded” candidates, easy lure for short-term political patronage, and lack of information regarding the background and credibility of the candidates among the electorates, have deepened the pathologies in the functioning of the electoral democracy in India. Only when the electorate will be conscious enough to understand that democracy is much more than just passively voting in elections at periodic intervals, a holistic democratization of the political landscape in general and functioning of the political parties in particular would be possible.

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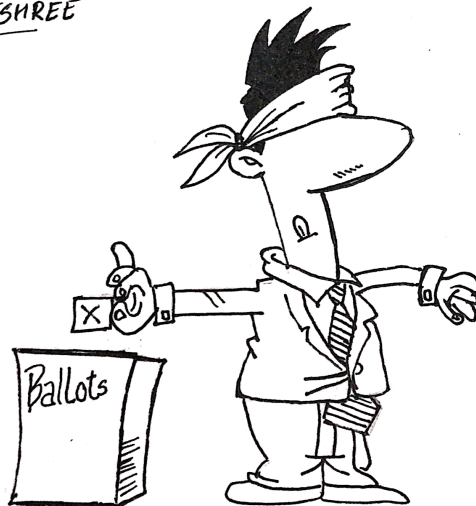
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Some Reforms are Urgent, Cannot Wait Anymore

Shreesh K. Pathak*

As an essential feature of a healthy democracy, general elections have been conducted in India at regular intervals since the first general election, which took place on 13 May 1952, after the adoption of the Constitution. Though political participation and various political processes are the ongoing activities in a polity, the elections are undoubtedly the most notable and visible exercises in a democracy. The process of colonization had exploited the *Indianness* inbuilt in the political-social conscience of the nation in a variety of ways, but this had also become a medium to witness the comprehensive phenomenon of development at several layers in Europe. Democracy, equality, liberty, rights, liberal notion of citizenship, voting rights, etc had become the buzzword of the time and all of these also marked their great impact on the intelligentsia of

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India, who were trying hard, along with daily activism, to respond to colonialism through the intellectual exercise of post-colonialism. This was extremely clear in the minds of the Indian liberals, amidst a raging freedom struggle, that the century is of rights, of equality and of democracy in general and India with its new beginning after independence...after 300 years of foreign oppression could not afford to lose these modern values from its political system. The constituent assembly formed to write the Indian constitution was very clear about this spirit and it was translated very well in the draft, too.

India had given goosebumps to the most nations of the west, declaring a universal adult franchise in the country while these nations, though way ahead in political development, were still struggling to give it to their women. Statesmen like Churchill, expressed their great disbelief that a country that had just witnessed a bloody partition a while ago was going to afford democracy, even without the recent tradition of practicing it. As a postcolonial response, when India adopted its own version of nationalism, which was based on diversity and heterogeneity unlike the modern democracies of the west, many American and European thinkers were almost sure that the Indian experiment with democracy was bound to fail. So, the free and fair elections being held till today, 60 years post-independence, at regular intervals in the country, are not only ensuring an indigenous sense, but also giving a befitting reply to the western apprehensions.

Apart from this self-congratulatory notion of our political system, it also becomes a very important topic of discussion about the vulnerabilities of our democracy and its functioning, especially with regards to the electoral practices. First and foremost, the scenario of political mobilisation and political institutionalisation are very worrisome if we are to consider the Indian experience of political development. Ideally, the institutionalization must go hand in hand with the political mobilisation to obtain the level of political development as Prof. Samuel P. Huntington suggests.

In the Indian case, we have achieved a phenomenal level of institutionalisation thanks to the Constituent Assembly and colonial experience but we are still lacking in the context of political awareness and mobilisation. For a population, which barely had 18 per cent literacy rate in 1951, that too unevenly distributed among layered social classes and which had been colonised for more than 200 years, it was not at all justified to expect from them an appropriate political mobilisation for their demands and will. Taking into consideration, the modern notion of democracy, it could be safely argued that this is quite new in Indian context. Due to the colonisation process, India had missed the opportunity and urge for spontaneous evolution of political development. So, from the divided

notion of regional powers or from the feeble allegiance of central monarchy, suddenly the people of India directly came under the republic-democratic sovereign.

At a structural level, though, this transition became smooth after independence, it was only on the surface, because people had not perceived it in totality. In the beginning, people took this development as a mere transfer of power from a foreign ruler to an indigenous ruler, largely. Gradually, the democratic notions started getting currency. But still, it was not enough to fill the gap between the growth arrows of the institutionalisation and its mobilisation. Till a time, that the awareness programmes for the voters of the nation, regarding interest articulation, aggregation and mobilisation cannot be launched specifically and an essential message for the true representation of identity and issue cannot be communicated well to the people, this political decay will continue to exist in our political milieu.

Election alone is the only political activity through which many political purposes of the polity are being served, so it is an activity of the utmost significance. Through election, people elect their representatives to represent their collective identity and issues. Here, one thing is noteworthy that the election process is not a selection process. In the selection process, a candidate must fulfil the eligibility criteria set by the selection authority but in an election, people elect their representatives that suit their needs at that time. Selection is best suited for the bureaucracy where certain set eligibility parameters must be met, in order to be in the permanent executive. Hence, in a democracy, election is essential for electing the representatives of the people. There are several methods of electing the representatives; India chose the first past the post method (FPTP). This is an easy method compared to all other of its alternatives, notably, the proportional representation system. Where the FPTP system is appreciated widely because of its easy methodology, the latter, the proportional representation system is widely acclaimed for its pure representative outcome.

India is known as the land of diversity and people of diverse identities. If India as a democratic country had adopted the parliamentary representative system, it should have adopted the proportion method of election in order to give a fair representation to each diverse identity. But India in the year 1949, was a fresh, newly independent country, and was experimenting with democracy with a very meagre literacy rate and a confined sense of political awareness, after almost 300 years of being ruled. Therefore, the ease of the process was preferentially picked over the purity of representation.

Two more reasons that Dr. Ambedkar had added to this choice:

Firstly, he was very apprehensive about the parliament in which the members would be chosen on the basis of a proportional electoral method. He expressed his fears that they would then be divided in little groups over petty, little interests and consequently it would hamper the stability of the house and government as a stable government must enjoy the full confidence of the members in the parliament in order to be in power.

Secondly, Dr. Ambedkar was not convinced about the suitability of reserving some seats especially for minorities. He was of the opinion that through proportional representation, minorities might be able to find their voice raised in the house but then there would not be any conformity about their representation in the house.

Today, the India of the 21st century is quite vocal about its identity and issues. In the multiparty system, there are several parties, which are very particular about the preservation and representation of the identity of their specific voters. Now, the literacy rate is also much better, compared to the year 1949 and the degree of political awareness too is much more than before. So now, there arises the requirement of a nationwide debate on the electoral method of the country because the FPTP system is falling short of many of the electoral objectives. Many votes are going unrepresented and India's diversity deserves to have a proportionately diverse and a profoundly much more, fair, electoral method for the proper representation of these diverse voters. This is a debatable point now and quite relevant too, of whether the requirement is of a pure representation of each diverse view from each constituency or that of some fixed seats representation of the minorities in the house. Now, when the regional parties are doing better, national parties are also doing better while dealing with the regional pressures and national aspirations; so this then is the most opportune time to have a nationwide debate on our electoral methods under electoral reform efforts of an advancing nation with advanced needs.

Though the members of the constituent assembly were quite aware about the vices of a party system, the party system was the only method where a continuous political awareness campaign and mobilisation can be initiated through civil society; so party system was accepted for Indian polity. For the sake of diversity and representation of the diverse identity of the people, a multi-party system was adopted. Now, we are having many parties at national and regional levels but sadly, they have neither proved themselves instrumental in building a concrete political awareness among the citizens nor aided in the nation-building process; in fact, they have actually exploited this lacuna of political awareness and gradually converted the voters into vote-banks as voters

are more connected to the identity politics rather they should be more concerned to the pressing issues of national and regional importance. Now the FPTP system allows political parties to consolidate only their set vote-bank and some swing votes as plus votes to win the election. This phenomenon makes election just an equation setting manoeuvring, rather a comprehensive process in which the citizens could express their support or anger towards the candidates, who are contesting for the election or re-election.

Lack of awareness among the citizens often makes a poor turnout of voters in the elections and this again makes the election more equation centric, on the basis of caste, class, religion, etc, and easy to handle for the political parties for their own nefarious purposes. Often political parties or candidates try to mobilise the voters through the polarisation of votes. Polarisation essentially is an attempt to create a binary among the people to be strictly on either side of the coin. In this way, parties who openly support one side, openly get votes in a torrent. This makes their task very easy, though it also harms the society at its core which eventually could lead it to disintegration and utter chaos. An outrageous speech, a communal appeal or a casteist remark could polarise the people during the elections and this could make them indifferent to the real issues at hand in the region and/or nation, like development and inclusion, education and skill development, health and services, etc and make them suddenly attached to the identity fault lines.

In this era of media prevalence and the omnipresence of the internet, the political class, with the help of media managers, has been able to reverse the narrative of the election. Elections are being conducted to choose the representatives as per the verdict given by the people. Therefore, this is not the examination of voters largely but more for the leaders. However, on a more popular note, people are so passionate about their party affiliation or so loyal to the candidate, that the winning or losing of the candidate is being considered as their own victory or loss. With the help of networking sites and chat applications, it seems sometimes that parties have converted the voters as not only their sympathisers but also as a cadre of their propaganda. Hence, one can find a party spokesperson at several TV debates, advocating and justifying each and every step taken by his party in any way and likewise there are several people who are continuously advocating their party in the same manner on different social sites and chatting groups.

Now, election is slowly being converted as a big manufacturing unit and the political parties have converted themselves as election machines. Ultimately, the whole purpose of conducting free and fair election gets defeated as the new

narrative, which has been set, that the election is for winning or losing of all the voters themselves with their leaders. People are mechanically electing but they are not judging the calibre of their candidates on their merits and sometimes they even find this judging argument irrelevant, because for them, identity is bigger than the issue itself. Furthermore, as per the Indian constitution, a voter needs to choose his MP or MLA, not the PM or CM directly. Nevertheless, political parties, for their own comfort, have made the elections more personality oriented. Definitely, establishing one good candidate at the apex is a lot easier as compared to placing good candidates in all the constituencies. This again undermines the motive of the whole election effort.

Criminalisation of politics is another growing concern. If a candidate who is having a criminal background or having many unproven criminal allegations against him, and if he is still getting enough votes to win, it means that there exists an administrative vacuum. Either people are not being heard at police stations and government offices or the agencies of the government are failing to give access to the public services and its deliveries to the people. This general frustration makes a person relevant, who is capable of making the public services available at his cue and his '*bahubali / dabang*' image is insurance for his credibility.

Pending electoral reforms, along with the judiciary who takes an inordinate time to give final verdict allow them to get elected. Now, we have some safeguards available against the candidates, who are convicted but still their role is not that subsidised in the system. The main point here is that they enjoy a popular support up to a certain extent. It is not that the people are not able to see their vices but rather, the tainted leaders make them comprehensively feel that there is no alternative other than them in the given conditions. Criminals in politics come through the channel of money transfers. When the people are less cognizant and opt not to vote on a performance basis but on the identities of the candidates or the propaganda of their parties, then, for winning the election, a candidate creates a propaganda which requires just resources and money. Through money, once the criminal gets access into politics, then it is a point of no return for them. This makes it crucial to understand that any sort of electoral reform must not be initiated from only one side; here the other important side: the people, is also very important and decisive. This side of the electoral reform only can be led by the civil society with its all prime stakeholders. Off course, for the electoral reforms, the primary side will always be the government.

The role of the government is primary because it can channelize the reforms at several levels and it has all the essential tools, too, to do so. If the organs of

the government could work in efficiency, the scenario would be different. For example, if the judiciary could expedite the pending cases, and if the executives could translate the policies in spirit and letters and if the legislature could fill the gap between them and the people through effective law-making as well as listening to them, this would easily fill the vacuum in which criminals or any other miscreants were otherwise finding a step-in.

Activism from civil society could only fetch the desired consequences when the people overcome their hesitation in political participation and an alienation from politics or any type of political neutrality. This is fundamental to understand that in any political system and especially in a democratic system, political participation is a pivotal point. These all together warrant urgency for a political literacy campaign from both, the civil society and the government in order to take an essential electoral reform step in a positive direction for the country.

The judiciary has recently given many decisions, which are actually an impressive impetus to the electoral reforms in India. Now, candidates must disclose the income of the family members too, along with his own. Often, it has been found that the miscreant leaders accumulate assets not in his/her name, but in the name of family members and even sometimes, in the names of the extended family members. This latest move could definitely put some restrictions on this sort of activity. This is a very justified reform in order to conduct a transparent election and ensuring the future, fair conduct of the candidates. The EC also proposes that making any false statements or declaration before the EC, should be considered an electoral offence. The court is also contemplating ways for speedy trials of MPs/MLAs/MLCs with criminal charges. Because of delayed justice, many convicted leaders, complete their terms twice or thrice before finally being barred from the contest. In this scenario, they often use their clout to tamper with the evidence which could prove them guilty and even influence the people who could be decisive in their conviction, thus affecting the final verdict. The security of the whistleblower is also of great prime concern in this regard.

Recently, the government has awarded a relaxation in the disclosure norms to the political parties especially in relation to corporate donations; this is certainly a very regressive step. This now brings opaqueness in the whole process of the governance and the electoral practices. Likewise, the government has introduced the system of electoral bond, which has created a furore among some media debates. Through this, the political parties can obtain unlimited donations from the corporate sector and the corporate sector, too, can benefit by gaining cent per cent tax relief under 80GGB. Another worrisome fact, in addition, is that the identity of the corporations involved need not be disclosed and this is

even immune to RTI. Furthermore, the FCRA act was amended by the government in such a way, that now, BJP, Congress and Left parties can take donations of any denominations from foreign sources and no enquiry can be set up against them. This amendment would be effective in a retrospective manner from 1976, as Delhi High Court was about to set up an enquiry from the year 1976 in such cases. Provision of this sort can only be counted as a regressive step in the line of electoral reforms. One interesting thing to mention here and which can be highlighted is that all the political parties behave/react exactly in the same manner and in unison when their interest is at stake. This clearly shows that unless and until the civil society takes an initiative for electoral reforms, it is naivety to think that the structure itself would take steps against it.

One reform that is well debated across the nation is state funding for contesting the elections. This would create an equal level playing field for all and people would get their representatives even if they cannot afford to contest. In this way, a control on resource spending in elections can also be exercised. This would eliminate any outside pressures over the system by lobbies. This also controls the flow of unaccounted money in the elections. Many sceptics believe that this could create an excess burden on the public treasury but a wrong candidate or a wrong government could cause a far greater harm than this controlled burden to the public treasury.

In 2013, in a major move, Central Information Commission (CIC) has declared that national political parties as public authorities are under RTI, since they receive subsidised resources and support from the government. The sad part is that all the six national parties refused to obey this order, despite several notices served to them. Here, the role of the media is very crucial. If the media would highlight the issue rightly at the right pitch, the political parties would definitely feel the heat and would follow the guidelines instructed by the CIC, under popular pressure.

The '*paid news*' phenomenon is actually an electoral offence. This is a highlighted issue but still no concrete step has been taken by the concerned party, yet. In the *paid news* phenomena, media agencies sell their editorial spaces to political parties in such a manner that it would appear to be a credible news and analysis item in favour of any particular party. In 2009, the Press Council of India investigated the media coverage of candidates. The Election Commission of India also took former Maharashtra CM Ashok Chavan to court over the allegations made against him.

One suggestion often raised by the parties who get newly elected is that the elections of the centre and the state must be conducted together in order to save

the expenditure of the public treasury and for optimum use of human resources in the process. However, here the grave concern is that the issues of the centre election and the state elections are quite different and conducting the elections together could dilute the different concerns of the people. It could also be possible that in the name of one, comparatively good government, another would also be formed or vice versa. This could affect the federal nature of the country.

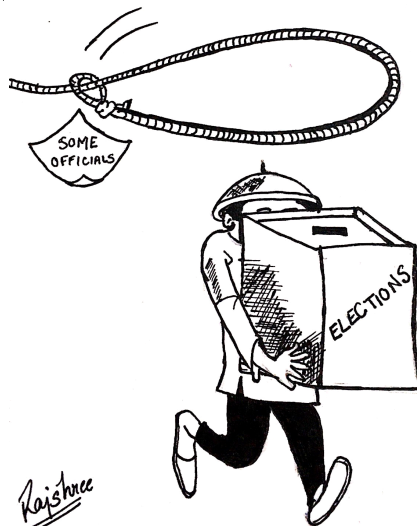
Some factions of the society and population at large as well as scholars suggest that there should be a mandatory voting. Technically this would seem to be a right move but unfortunately, democracy is not a mechanic system in which we need to operate technically. Undoubtedly, the maximum voting percentage would impact the election in a far better way and it would eventually strengthen the overall electoral spirit but making ‘the casting vote’ mandatory is against the democratic spirit and it will defeat the very purpose of democracy. In a democracy, sovereignty lies with the people. An individual should not be compelled to choose his/her representative. As the casting vote is a right, no casting of the vote should also be a right, which ensures the spirit of liberty among citizens. This could also be the case that through not casting the vote, a citizen is trying to show her protest to the system or government in a peaceful manner. Mandatory voting would take away this space, literally snatched away from the citizens.

Another suggestion could be the linking of the *Aadhar* card to the electoral rolls, which could prove to be a very smart and efficient strategy in order to find duplicity of voter IDs and bogus votes. This could definitely make the voting more accurate and efficient. The election commission is a constitutional body, where there are three election commissioners, including the chief election commissioner. The constitutional position of chief election commissioner is like that of a judge of the Supreme Court but this same status is not enjoyed by the other two election commissioners. This makes the other voices in the election commission next to meaningless. This requires a constitutional amendment and only the pressure from civil society could play a decisive role in it. There is one more deficiency while viewing the status of election commission. The administrative expenditure of the commission is a voted expenditure unlike the other independent constitutional bodies. This makes EC somewhat dependent on the same legislature, which elects itself through the election commission. EC too needs the not-votable expenditure mechanism, which should be charged on the consolidated funds of India. *Charge budget* is an essential symbol of independence. Likewise, the commission also requires its separate and independent secretariat, which would give a wider autonomy to the commission regarding appointments, promotions, etc. Otherwise it would always attract disturbing executive interferences.

There should also be a common electoral roll for the centre and state elections for the sake of transparency; this actually, is a very basic reform and can be implemented quite easily. This can only happen when the central government would write to the various state governments in this regard. A ban on the candidates contesting for two or more seats must also be considered as an important electoral reform; this often proves to be a futile exercise. Any defaulter of public dues should not be allowed to contest the election. Any misuse of religious or regional/social identity for electoral gain must be taken into account and this tendency must be actively discouraged. Right now, EC does not have the power to deregister any political party; this power also must be given to the EC in order to deal with political parties who only come into existence to convert black money into white, whilst collecting donations from corporations without citing their names.

There are more than 47 proposals made by the EC, itself for electoral reforms and it is looking forward for people to demand for these reforms from the administration as the government alone can do it. A government who has the will power to take these reforms seriously can only go ahead with these, as it requires courage and confidence to do so. Eventually, with more additions or deletions, India requires these proposals to be translated into a reality; otherwise the very basic principle of democracy would gradually fade away into oblivion.

India, now, cannot afford waiting for any electoral reforms. Being such a vast country with such magnificent demographic diversity, India cannot hold democratic values intact in the future, without making some serious efforts for bringing about electoral reforms. In the country, almost every year, here and



there, elections are being conducted at many levels; it is not that elections are the matter of five years interval only. This shows the urgency of electoral reforms in the country. Some reforms are so urgent that they cannot wait anymore, as already their absence is damaging the spirit of democracy in the country and it is quite visible too. Let us hope, people will become more aware and will participate more consciously in political affairs and will elect such a government that would show the honest determination for the electoral reforms.

Neeta Sinha*

Psycho-Social Analysis of Challenges Facing India's Smart Cities

Abstract

A smart city concept entails four main system components which include: Smart technology (including ICT); Smart innovation; Smart System; and Smart people. The word 'smart' in the broader sense of its meaning refers to the application of a certain kind of intelligence in finding solutions to problems; and from a humanoid angle, it also becomes a training and behavioural issue. What is meant here is that the use of smart technology and innovations efficiently, would inevitably require smart, human behaviour as well. Since there is a lack of a benchmark of social behaviour at the minimum or sub-zero levels, even the most efficient technologies and systems often fail to deliver the desired results. Open defecation, urinating in public places, spitting on public property, throwing remains of "gutkha" and "pan masalas" (commonly practiced, deleterious, tobacco and betel nut habits of the Indian sub continent) in wash basins and public urinals, general disobedience of the traffic rules such as jumping signals, risky driving, chaotic parking are just a few of some such examples of undesirable social behaviour rampant across India, that form the basic issues which are affecting the smartness of smart systems.

Since technology alone cannot find all the answers, it can only be used to increase the efficiency of performance; and in actuality, a major change is required at the psycho-social behavioural level to make the technology smart by making the people using it, smart. It implies an operant conditioning (Skinner 1938)¹ of sorts which includes both reward and reprimand. In India, the smart city initiative will have to look into

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the psycho-social behaviour of people at large before designing the options. This paper tries to deal with the psycho-social aspect of the urban dwellers in India to propose the required benchmarking for the making of smart people for our future smart cities.

Key Words: *Smart City, defecation, BRTS, Swachh Bharat, mobility*

Introduction

Building smart cities in India is one of the ambitious flagship policies of our government, announced by Narendra Modi, after coming to power in 2014. It aims at converting a hundred selected cities of India into smart cities in a phased manner. To start with, 20 cities have been identified for this purpose, which includes among others, Bhopal, Bhubaneswar, Pune, Jaipur, Kochi, Ludhiana, Ahmedabad and Surat, the last two in Gujarat. Experts of urban policy are of the opinion that Indian cities have long suffered from a lack of proper planning, investment and/or infrastructure. The development deficit therefore grips all the big as well as small cities of India, which struggle for basic amenities such as basic drinking water, sanitation, power, transportation etc. While the development deficit looms large, cities are also under tremendous demographic pressure, which often reflects in the unplanned growth of the cities as well as its peri-urban sprawls. Statistically speaking, 38 per cent of India's population is projected to be urbanized by the year 2020, which will put tremendous pressure on the already over stretched urban infrastructure, which exists in India.

In the backdrop of such a development deficit and the ever-growing demand for more efficient infrastructure, India needs to look for better strategies to rejuvenate the urban system and infrastructure; actually the rationale of smart cities, which is both functional and ambitious. A new kind of urbanism, which will require interventions at various levels including smart technology (ICT), smart design, smart systems, smart innovation and also smart people is required to be envisioned. On one hand, the first four interventions require financial and technological support whereas, on the other, the last one: smart people require a novel approach as it depends on modulating the psycho-social behaviour of human beings.

In the psychological parallel, the 'smart' has dual connotations. In one dimension, the commonly believed one, smartness means fashionable, stylish, elegant, neat, and debonair while in the other, it also implies intelligent, wise, and adept, among others.

Sternberg (2003)² identifies three types of intelligence in human cognition which include analytical intelligence, creative intelligence and practical intelligence.

- Analytical intelligence means the ability to analyze and evaluate ideas for problem solving and decision-making.
- Creative intelligence (largely used in design thinking) involves going beyond the apparent and creating new options and ideas.
- Practical intelligence refers to the individual's ability to find the best connect between themselves and the environment.

The aspect of psychosocial behaviour with regard to smart cities has a great deal to do with the application of these three aspects of human intelligence.

According to a general observation, people in India have a tendency to either defile or misuse urban systems. It reflects in several ways: the way people maintain sanitation, cleanliness, obey traffic rules, maintain common amenities like roads, parks, public buildings and places, etc. There seems to be an apparent lack of social refinement and also a lack of adherence to social norms, including those pertaining to urban living. Here is where arises the likelihood of failure of technology, design and innovation intervention in smart cities. This makes an analysis of the psychosocial behavioural aspects of Indian urban dwellers imperative.

Why people behave with the urban environment, as they do, needs an in-depth enquiry. Thus, the general tendency of people of littering, poor sanitation habits, breaking of civic norms of safety and healthy living require an in-depth, behavioural study. This paper has tried to investigate the psycho-social behaviour of people from the perspective of a smart city because *a smart city cannot attain smartness unless the people in it are themselves, smart enough*. This paper will also explore the behavioural issues related to sanitation, mobility and interface with the urban systems from the psychosocial perspective.

Swachh Bharat Abhiyan: The Implementation Challenges

Does the access to a toilet ensure usage? With the excellent Clean India arrangement, the administration plans to accomplish an Open Defecation Free (ODF) India by 2019 with the development of 12 crore toilets in rustic India, at an anticipated cost of Rs 1.96 lakh crores.

Notwithstanding the way that the Administration is trying to lessen open defecation by building toilets in different parts of the nation, it remains a persistent, huge challenge. With the assistance of Government grants, individuals have built toilets yet the utilization of these toilets by people is insignificant. Individuals, mostly in rural areas and a few urban territories continue with the age-old habit of defecating in the open.

According to the latest Swachhta Status Report of 2015, the greater part of the provincial populace (52.1%) of the nation still defecates in the open. Behavioural change alone, then is the key priority of the Swachh Bharat Abhiyan, since sanitation is more of a behavioural issue, says the central government. “It involves a change of the mind set amongst people to stop open defecation and thereby adopt safe sanitation practices.

The rationale for open defecation in India is usually poverty (people are so poor that they cannot afford toilets), rural houses being constructed without toilets and profound established social standards that have allowed open defecation as a tolerable practice. So, people are lead to believe that nothing is wrong in defecating in the open which is trusted as a reasonable and acceptable practice, whereas it is believed that building a lavatory inside the house pollutes the environment of the house. Even the two thousand year old Hindu text, called the “Laws of Manu,” encourages open defecation.

What is required here is a total behavioural change and keeping in mind the end goal to bring about these changes, communication programs need to be worked upon. A standout amongst the most regularly utilized methodologies for setting off this change is community-led total sanitation (CLTS). This includes uniting the occupants of a group and, through an accomplished field facilitator and intuitive sessions, motivate them to comprehend the wellbeing and health related financial implications of defecating in the open. At the point when this is done through persistent engagement, CLTS more often than not prompts the entire group to choose on the whole that it is helpful to stop open defecation and to construct and utilize toilets. This approach is practical and dependable as the group takes responsibility for issue and cooperates to roll out the improvement plans.

In practice, however, this is never so easy. There are always people who refuse to believe in the benefits of using a toilet. Many prefer to go out in the open as their ancestors have done for centuries – a habit extremely difficult to break. (Bandura and Walters 1963)³ This entrenched customary conduct is profoundly imbued through practice from childhood; it is taught.

To persuade them generally the CLTS approach utilizes different strategies, for example, framing ‘Nigrani Samitis’ (watch committees) who monitor those in a town who still defecate in the open, garlanding “guilty parties” and tailing them to open defecation locales, and going around the town with a band declaring the names of open defecators.

Every one of these techniques have a few things in common; they are peaceful, generally convincing in tone, and, while they have a component of

naming and disgracing, the strategies are embraced by the group and an official conclusion to change is left to the individual.

Social standards and propensities should be changed if open defecation is to be effectively battled. Fundamentally, constructing more toilets, alone, is not going to solve the problem. The administration has effectively found a way to teach individuals about the risks of open defecation and reward the individuals who utilize toilets. In Haryana for instance, it launched the “No Toilet, No Bride” campaign that urged women to only marry men whose home had a toilet.

Similarly, people group approaches that include orderly and organized Data, Instruction and Correspondence (IEC) and Between Individual Correspondence (IPC) components are not yet incorporated in the Swachh Bharat Mission (SBM). The non-appearance of Social and Behavioural Change Communication (SBCC) exercises implies that numerous family units that get toilets have not requested them. Thus, not all individuals from the family utilize the toilets since they do not have the foggiest idea of their advantages. In few cases, no individuals from the family utilize the toilets, outlining the requirement for greater group level awareness about sanitation.

Smart Mobility

In a setting where transport systems are progressively synchronized, a snarl-up can make increasing impacts, affecting expenses, as well as the dependability of transport frameworks. The monetary and social effects of congestion remain a remarkable issue, especially in creating nations where it can obstruct financial development.

In India, street accidents add up due to numerous passing setbacks. As urbanization builds up, so does the vehicular movement. The number of individuals utilizing vehicles have increased immensely in the past few years. All state governments are attempting to give the general population, a financially viable and efficient transport system. The Bus Rapid Transit System (BRTS) is one such initiative. The BRTS transport runs on a lane dedicated and designated just for it, which now and again is however, infringed on by different vehicles and people. This disobedience of the rules is what tends to lead to an increment in the number of mishaps in an otherwise, very well planned and safe system.

Disregarding the administrative prohibition of private vehicles to ply in the BRTS hallway, the general population is not taking care to obey these principles and controls, leading to mishaps and road accidents, some of which have been demonstrated to be lethal.

Laws? What are they? What's the purpose of having them? Laws are guidelines to facilitate the safe existence of all individuals living in the society. They secure our general wellbeing, and guarantee our rights as nationals against misuse by other individuals, by associations, and by the administration itself.

A group of scientists have found that even little demonstrations of unscrupulousness – like lying on a cost report – can give individuals a prompt surge, that they term a “cheater's high” – a kind of psychological reward of breaking the rules.

Everybody cherishes a decent deal. Indeed, even wealthy individuals appreciate the fulfilment of clinching a decent deal. For a few people, however, the journey to get more for less, incorporates the desire to get something in vain – which may transform into theft or breaking of rules. Not everyone however steals because they need the goods. Kleptomania – the compulsion to steal is a sort of motivational control issue – a turmoil that is described by issues with passionate or behavioural restraint. If you have an impulse control disorder, you have difficulty resisting the temptation or drive to perform an act that is excessive or harmful to you or someone else. The same impulse control disorder probably drives people to take the dedicated BRTS Lane even when there is no rush of vehicles on the road. The individuals who trust that human conduct is represented by judicious standards are hard put to clarify quite a bit of such wrongdoings.

Jack Katz, an Associate Professor of sociology at the University of California, Los Angeles, takes note of the fact that sociological and mental investigations of fierce wrongdoings, (for example, burglary once in a while) concentrate on its recreational perspectives – what he calls “the valid attractions” of high-hazard criminal savagery. The specific delights of these violations are not materialistic in his view; rather we can discover why individuals confer them by realizing “what it implies, feels, sounds, tastes, or resembles” to submit them. What makes wrong doing appealing, are the joys of utilization, as is valid for different types of diversion, for example, betting or infidelity. By focusing on how and why wrong doers may discover such conduct appealing and worth rehashing, Katz reveals to us much about the identity styles of individuals who are attracted to nonsensical behaviours and gives essential insights about its counteractive action and control.

Once in a while, one comes across some lunatics who infringe upon the law; these sort of individuals are inherently mean, don't trust the law and believe it is not applicable to them. The vast majority, in any case, violate the law out of distress. They have no conscience and lack a social soul; they do not understand

the repercussions of their actions or that their activities will influence or affect others also; they cherish the momentary excitement of overstepping the law, the euphoria of doing the forbidden, which may eventually end with them in prison or at least make them liable for a fine.

Investigation on why we break rules focuses to a variety of reasons. We might want to experience a cheater's high, the good mood that follows getting away with a transgression. Or, on the other hand we may be under the misapprehension that our actions won't hurt anybody. The greater part of the outside administer breakers tested said that they had broken standards that had neither a rhyme nor reason, or on the grounds that others too had broken similar laws, or in light of the fact that the outcomes of their activities would not be too critical.

Perhaps some of these or all of these reasons cited above may be stimulating the individuals to drive into the BRTS lane even when the roads are relatively free. People take pride and pleasure in breaking the rules and it gives them a sense of high.

Solid Waste Management

There is a direct correlation between the rising urban demography and creation of solid waste, which makes municipal solid waste (MSW) management a humongous task. This is among one of the priority areas under the smart city mission. Uncollected piles of solid waste is not only an environmental and health hazard but against the spirit of the smart city concept too. Solid waste management for smart cities is both a challenge and an opportunity because it requires new alternatives and newer models to handle it. Smart cities will have to experiment with new concepts. Central Public Health and Environmental Engineering Organisation's (CPHEEO) Manual of Municipal Solid Waste Management (2016) indicates that during the 2014-15 period, 1,43,449 tonnes per day (TPD) of MSW was generated in India with an average waste of 0.11 kilogram (kg)/capita/day. Of the total 1,17,644 TPD approximately, only 80 percent was collected. Only 32,871 TPD (22%) was processed or treated. Besides, it also points out that segregation at source, collection, transportation, treatment, and scientific disposal of waste remains grossly inadequate, which contributes further to the urban mess.

But besides disposal of collected waste another major challenge that cities are facing today is that of littering of the roads and public places with 'pan masala', 'gutkha', and the stains sullyng the city by spitting after consuming the same, not only on the roads but also on the walls of newly made buildings.

Another major source of littering is plastic packets, food waste and water bottles carelessly thrown away on the road and out of moving cars.

The Psychology of Littering

Littering continues to be a big environmental problem in cities. Research has shown that the behaviour trait of littering is complex and can be attributed to a variety of sources, including deliberate tossing of litter from vehicles, accidental litter from items blowing out of vehicles or from unsecured loads, and litter left behind by pedestrians.

One thing research has proven is that it is tough to label an individual as a “litterer.” One may litter in certain situations, but not in another. Littering is not a consistent behaviour. Individuals can be influenced by a number of factors, including a belief that an item is not litter (such as a cigarette butt or banana peel), laziness, perceived lack of consequences for their actions, seeing litter already in a given area, or a lack of trash receptacles.

- People litter because they do not feel responsible for public areas like streets and parks. The more they litter, the more it becomes a habit, and the worse the community looks.
- People usually litter outside their own neighbourhood where their trash becomes someone else’s problem.
- People litter because they believe someone else – a maintenance worker or responsible neighbour – will pick up after them.
- Once litter starts to pile up, people feel even less responsible for adding to the litter. If an area is clean, people are less likely to litter.

Litter is junk, discarded or scattered about in disorder over a socially inappropriate zone. It is terrible, costly, across the board, and risky. Littering behaviour has got relatively little research attention even with amplified public concern for more stringent protection of “our environment.” Considering the extent of litter, and expenses incurred to clear it, it is astonishing that the major variables of littering behaviour have been neglected by the research community of social and behavioural scientists.

Gallup (1972)⁴ discovered similar yet stronger demeanours toward pollution. Research showed education is positively related with concern about the degradation of the environment.

As per Zimbardo’s theory of “deindividuation” (1969)⁵ circumstances which engender a sense of anonymity may lead to abdication of personal duty. Studies suggested that people are more likely to litter anonymously, than when their name can be identified with their conduct.

Festinger's theory of social comparison (1954)⁶ contends that people conform partly out of a desire to be correct and what is correct is decided largely through social comparison. On the proposition that people seek consensual validation for their behaviour from environmental signals, this review conjectured that littering would be more likely in a previously littered area than in a cleaner range.

Rokeach theorizes that values, rather than attitudes, are stable determinants of behaviour. The cognitive variables concentrate on levels of litter mindfulness, concern, and keenness to act against litter.

A Harris survey (1970) interviewed over 3000 subjects and asked them to select two or three of the most difficult issues confronting the community in which they lived. Pollution was cited most frequently, followed by crime and medications. Other survey discoveries showed that 9 percent people pointed to "tidy up of road litter" as the most imperative issue, and 68 per cent people considered visual contamination (counting litter) to be a "genuine" urban issue, with 16 percent trusting that it ought to be "attacked first." For pollution, the public was not only very willing to see government develop solutions but was also very willing to become personally engaged in building up an answer. It is one thing not to realize that one's activities constitute littering; it is another thing entirely to be aware of one's behaviour and not be concerned about or acknowledge responsibility for its results.

Festinger, Pepitone, and Newcombe (1952)⁸ noticed that circumstances inciting feelings of anonymity may lead to ignorance of personal accountability. They labelled this phenomenon "deindividuation." The bursting of the bonds of self and separateness allows the "reduction of inner restraints." (Festinger, Pepitone, and Newcomb, 1952)⁹ Once the individual has been "submerged in a gathering", or "deindividuated," his restrictions are lifted, and he is free to do what he desires. As indicated by this definition, being an unknown member of a crowd ought to lead to more antisocial behaviour. Mobs, lynching, and other examples of mass violence speak about circumstances in which people are more likely to commit anti-social acts that they ordinarily would not engage in. Research and theory on anonymity has been performed and proposed by Zimbardo (1969)¹⁰ who trusts that anonymity strongly advances "deindividuation". Deindividuation is a complex process in which a series of antecedent social conditions lead to changes in perception of self as well as other people, and in this way to a lowered threshold of normally restrained behaviour. (1969, p. 251).

Litterers were less willing to acknowledge responsibility for their activities than non-litterers (Heberlein, 1971),¹¹ and the success of an antilittering campaign aimed at changing littering behaviour by expanding personal sense of responsibility for holding fast to non-littering electives has already been exhibited. (Dodge, 1972)¹² The observation that people litter less frequently when in gatherings than when by may be because of the obscurity being enjoyed in groups and gatherings.

The study also examined the role of socio-demographical and psychological factors in taking littering prevention actions among males (770, 56.6%) and females (590, 43.4%) residents of Ibadan, Nigeria. Their age ranged from 18 to 65 years. A questionnaire was prepared for data collection. Results indicated that altruism, environmental self-efficacy, locus of control, self-concept and age accounted for variations in taking littering prevention actions. This indicated that high levels of altruism, environmental self-efficacy, self-concept and internal locus of control are motivational resources in taking littering prevention actions. Therefore, stakeholders who have littering prevention as their priority should incorporate this information when they design interventions to promote taking littering prevention actions. Psychologists should be involved in designing such procedures to ensure the inclusion of behavioural issues. An integrated approach is the most efficient tool of promoting littering prevention actions as can be seen in the study of the residents of Ibadan.

Government also deployed laws and formal governmental structures to address the problem. Despite the deployment of these regulatory tools, littering remains a problem in Ibadan. The subject matter is becoming a behavioural problem instead of an environmental problem, and because behavioural issues are domiciled in psychology, it would be seminal to explore the problem from a behavioural prism, such as taking littering prevention actions in the field of environmental psychology, taking littering prevention actions is an aspect of responsible environmental behaviour (REB, Tanner, 1999). REB covers individual's different preventive measures taken to protect the physical environment (Jensen, 2002). Consequences of taking littering prevention actions include significant reductions in time spent on sanitation and cleaning activities, and in money and manpower costs associated with serious health and environmental problems. Beyond the question of quality of life, taking 'littering prevention' – actions has implication for family and community health through reductions in bad odour, flies, cockroaches, rats, other small and dangerous insects which may breed ailments and / or reduction in dirtying the surroundings and prevention of human health endangerment.

Conclusion

The issue of cleanliness in its clean/dirty and pure/impure antinomies definitely has a social and cultural dimension. There is a very old saying that “cleanliness is next to godliness.” It is well said by John Wesley, “Cleanliness should be given a priority in all the homes from childhood so that people practice it as a habit and can be benefitted from all through the life.”

Cleanliness is like a good habit, which not only benefits a person, but can benefit the family, society, country and thus the whole planet. It can be developed at any age, however, best to practice it from the childhood and thus become responsible citizens.

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Perceived Control, Coping and Subjective Wellbeing among Infertile Men and Women

Abstract

The purpose of this study was to investigate the perceived control, coping and subjective well-being among infertile men and women between the ages 20 to 45 years. The descriptive (ex-post facto) research design was opted for this study. The sample of this study was composed of 30 infertile men and 30 infertile women, collected from some private infertility centres in the Thrissur district. The samples were collected by the simple random sampling method. The data collection instruments are: Personal data schedule, coping strategy inventory (CSI-S), subjective well-being inventory and Sphere of control – 3. There was no significant difference in perceived control and coping among infertile men and women. Infertile men used an engagement type of coping and infertile women used a disengagement type of coping. There was no significant difference between early and late aged infertile people in perceived control as well as subjective wellbeing. The early aged infertile people used the disengagement coping style more. In addition, perceived control was found to be positively correlated, both with engagement coping and subjective wellbeing. There was a significant relationship between subjective wellbeing and engagement coping among infertile men and women. The study helped to expand therapeutic support to infertile men and women. The findings of the study helped other people in the society to be aware of the problems faced by infertile people.

Key words: *infertility, perceived control, coping, subjective wellbeing*

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Introduction

Infertility has been reported as an important stressor and life crisis in different cultural settings. (Newton, Sherrard and Glavac, 2007) Infertility in many parts of the world has dangerous consequences for the health of both men and women due to the high cultural premium placed on childbearing in many countries. Infertility often poses serious social problems for couples (Okonofua, 2003) cross culturally. It is recognized as a stressor event with the potential to cause havoc in the lives of individuals, couples and families. (Burns and Covington, 2006, Shapiro, Shapiro and Paret, 2001) The Stress related to the wish for a child not being met, has been associated with emotional sequences such as anger, depression, anxiety, marital problems, sexual dysfunctions, and social isolation. Couples experience stigma, a sense of loss and diminished self esteem due to their problem of infertility. In India, when a couple is childless, the female is usually blamed. But, more often than not, it is being detected that the males are responsible for the lack of an issue. However, now specialized health care units known as infertility clinics are available. They are capable and well equipped to identify the cause of the infertility and take up treatment to remove the disorder.

Infertility is one of the major reproductive health problems that affect millions of couples in the world. Infertility is the inability of a person, animal or plant to reproduce by natural means. In other words, infertility is that condition, when you are unable to conceive after one year of unprotected intercourse or one is unable to stay pregnant. Only a doctor can make a final diagnosis, but if you have had unprotected sex for more than 12 months and are still not pregnant, there is a good chance one or both of you may have an infertility problem.

Perceived control reflects the degree to which an individual believes that a situation is controllable and that he or she has the skills necessary to bring about desires or avoid an undesired outcome. Feeling in control is important to people's overall well being. Personal control or the perception of control is important factors in health maintenance. (Wallston, 1997, Langer, 1983) The importance of perceived control has been underscored in numerous studies of health and even survival. Langer (1983) suggested that an individual's perception is more critical than his or her behavioral responses. She also suggested that an individual's actual sense of control is likely to be preceded by perceived control and that people's sense of control or lack of it is something that is inevitable.

Without a sense of control, an individual may fail to understand that he or she has options (Langer, 1983) and may even become hopeless and helpless. (Seligman, 1978) Infertility, by definition, is a loss of control over ones

reproductive ability. Yet very little systematic empirical research has examined how the objective facts of infertility translate into the subjective experience of personal control. The diagnosis of infertility is a heavy stress-giving situation for both males and females. It will be difficult for them to perceive the situation and to control themselves. Anecdotal evidence has identified feelings of loss of control as common among many, involuntarily childless individuals. (Mahlstedt, 1985; McCormick, 1980; Matthews and Matthews, 1986; Menning, 1977; Sandelowski and Jones, 1986; Seibel and Taymor, 1982).

There are only a few studies done on the perceived control of infertile people. Perceived control can be defined as the belief that one sees that he or she has control over their inside state, behaviours and the place, people, thing, feelings or activities surrounding a person. (Wallston, Kenneth, Strudter Wallston, Barbara, Smith, Shelton, Dobbins, Carolyn, 1987).

In psychology, coping means, to invest one's own conscious efforts, to solve personal and interpersonal problems, in order to try to master, minimize or tolerate stress and conflict. (Weiten, & Lloyd, 2008) The effectiveness of the coping effort depends on the type of stress, the individual and the circumstances. Coping responses are partly controlled by personality, (habitual traits) and also partly by the social environment, particularly the nature of the stressful environment. (Carver, Charles, Connor-smith, Jennifer 2010).

In today's modern world, the problem of infertility is increasing and becoming a social concern. Infertility and its remedies are major crises in one's life, that can prolong for several excruciatingly painful years. These incidents provoke tensions in life and couples are subjected to an emotional attack. Strategies to encounter these changes in life and the resultant tensions vary in different individuals, regarding different situations. Coping strategies are mostly, a collection of one's cognitive and behavioral efforts which are used to interpret, analyze and reform a stressful condition, resulting in a reduction of any discomfort arising therein. (Gbazanfari, & Kadampoor, 2008) Two main coping strategies exist: on one hand, we have emotional coping strategies, which include efforts to set emotional consequences of stressful incidents and keeps the emotional and sentimental balance by controlling resultant emotions from stressful conditions. On the other hand, we have problem centered coping strategies, which include one's effective acts with respect to stressful conditions and also actions trying to remove or change the source of stress.

Subjective well being (SWB) is defined as a person's own cognitive and affective evaluations of his/ her life. (Diener, Lucas and Oshi, 2002) The cognitive element refers to what one thinks about his or her satisfaction with life in global

terms (life as a whole) and in domain terms. (in specific areas of life such as work, relationship etc) The affective element refers to emotions, moods and feelings. A Person who has a high level of satisfaction with their life and who experiences a greater positive affect and little or less negative affects would be deemed to have a high level of SWB. According to Ed Diener, an American psychologist, subjective well being is multi-dimensional and includes positive and negative emotions (e.g. not only the frequency, duration and intensity of joy, pleasure happiness but also that of anger guilt, fear, depression, sadness, etc.) as well as global life satisfaction and satisfaction with different aspects of one's life (partnership, income, friends). Aspects of good psychological functioning can also be seen as part of a person's SWB.

The wellbeing of infertile couples is affected by numerous variables. We can say infertility, is without a doubt, a life altering experience. From your self-esteem to your plans and dreams for the future, the relationship with your friends, family and even your spouse can all be affected. Stress, sadness and depression levels are very high in these people. All these affect their well being. The well being refers to a person's own assessment of their happiness and satisfaction with life.

Objectives of the Study

- (1) To find out the significant difference between infertile men and women in perceived control.
- (2) To know the significant difference between infertile men and women in coping with infertility.
- (3) To examine the significant difference between infertile men and women in Subjective wellbeing.
- (4) To measure the significant difference between early and late aged infertile people in perceived control.
- (5) To understand the significant difference between early and late aged infertile people in coping.
- (6) To know the significant difference between early and late aged infertile people in terms of subjective wellbeing.
- (7) To measure the significant inter-relationship between the three variables:- perceived control, coping and subjective wellbeing in infertile early adults.

Hypotheses

- (1) There is no significant difference between infertile men and women in perceived control.

- (2) There is no significant difference between infertile men and women in coping.
- (3) There is no significant difference between infertile men and women in terms of Subjective well-being.
- (4) There is no significant difference between early and late aged infertile people in perceived control.
- (5) There is no significant difference between early and late aged infertile people in coping.
- (6) There is no significant difference between early and late aged infertile people in terms of subjective wellbeing.
- (7) There is no significant inter relationship between the three variables:- perceived control, coping and subjective wellbeing in infertile early adults.

Need and Significance of the Study

The need and significance of infertile studies are increasing in our society because worldwide, more than 70 million couples suffer from infertility. Regardless of the medical causes of infertility, both males and females receive the majority of the blame for the reproductive setback and they suffer personal grief and frustration, social stigma and serious other psychological problems. So, this is a topic of great significance in the field of psychology. In the view of the importance attached to parenthood in our culture, it is not surprising that infertility is reported to be considered as a major cause for divorce and marital instability. The total wellbeing of couples is destroyed. This study about the perceived control and coping of infertile men and women helps the therapist to find out the couples present state of mind and gives necessary suggestions to accept their situations. The accepted norm is that infertility in a couple stigmatizes the wife as barren and the husband as sterile. Men usually feel more threatened, expressing themselves, since they have often been conditioned to repress their emotions. (Peterson et al., 2006) When a couple is diagnosed with infertility they will have difficulty in coping and sometimes they may lose control. From the present study, we can observe the couples in these two areas and can give valuable suggestions for creating a better life condition for them.

Method

Sample: A Sample is a fine part of the population whose properties are studied to gain information about the whole. Sample is the subset of a population selected to participate in the research study. (Polit & Hungler 1999) The present study was comprised of 30 infertile men and 30 infertile women, with in the age

group between 20-45 years. In the present study, simple random sampling method was used for selecting samples from various infertility clinics. The selected sample contains men and women from all communities. These samples were collected from different private infertility clinics (especially craft hospital, Kodungalloor & Care hospital Thrissur) and some other health centers in Thrissur district. Inclusion Criteria for selecting the samples were they must have age above 20, willing to have a baby, having length of marriage at least 1 year, and happy to participate in study. Exclusion Criteria were age won't be above 50, won't have any physical illness that prevents them from conceiving, and not suffering from any neurotic or psychiatric illness.

Instruments

Coping Strategy Inventory (CSI-S): This was developed by Tobin. (1995) The purpose of this questionnaire is to find out the situations that make people troubled in their daily lives and how they are able to cope with that particular situation. The format of the CSI is adapted from the Lazarus "Ways of coping" questionnaire. (Folkman & Lazarus, 1981) This is a short form and it consists of 32 items in a 5-item *Likert* format. There are a total of 14 subscales on the CSI including 8 primary scales, 4 secondary and 2 tertiary scales. Construction of the subscale was based on a review of the coping assessment literature. (Tobin, Holroyd, and Renold 1982) There are 9 items in each subscale. Raw scores are calculated simply by adding the *Likert* responses of the items for a particular subscale together. To find out the secondary & tertiary subscale scores, simply add together the primary scales that make up that subscale. *Cronbach's* alpha has been the most frequently reported co-efficient of reliability for assessment of coping process. The alpha co-efficient for the CSI is ranging from 0.71 to 0.94. The factor structure of the CSI (Tobin, Holroyd, Renolds & Wigal 1985) supports a hierarchical relationship between the proposed subscales.

Sphere of Control – 3 (A Scale of Perceived Control)

This scale was developed by Paulhaus. This instrument was designed to measure 3 components or spheres of control: Personal achievement, interpersonal relations and the socio-political world. (Paulhus & Christic, 1981) This is a 30-item scale in a *Likert* format. There are some negative items in the scale, on all the negatively keyed items; we have to reverse the subject's responses. (i.e. 5=1, 4=2, 3=3, 4=4, 1=5) Then calculate the three scores by summing the 10 items for each subscale i.e. for personal control, interpersonal control and for socio-political control. On all negatively keyed items, reverse the subject's responses. Then, calculate the three scores for personal control, interpersonal control and sociopolitical control by summing the 10 items.

In the original scale development report, all 3 subscales showed test-retest correlations of above 0.80 at 4 weeks, and above 0.60 at 6 months. (Paulhus & Christie, 1981) Paulhus, Molin and Schuchts (1979) reported a study on the control profiles of varsity football players, varsity tennis players and non athletes (all males). The study provides further support for the construct validity of the SOC scales in that the authors were able to produce a control pattern, unique to each population on the basis of general character description made by rates familiar with such athletes.

Subjective Wellbeing Inventory

The present tool of subjective wellbeing inventory is an adapted and modified version of Sell and Nagpal – subjective well being inventory (1992) by Suhany and Sananda Raj. (2007) This tool is designed to measure the feeling of wellbeing or a lack of the feeling, as experienced by an individual or a group of individuals in various day to day concerns. It consists of 25 items. The split half and alpha reliability of the test were estimated to be 0.70 and 0.84 respectively. Concurrent validity with the quality of life questionnaire (WHO, Malayalam adaptation by Laiju & Sananda Raj, 2001) was found to be 0.71 CN = 64). This indicates the test is also a highly valid measure of subjective wellbeing.

Results

This section describes the major objectives of the study. This gives information about the comparison between infertile men and infertile women on their perceived control, coping and subjective wellbeing. The study also measures the relationships between perceived control, coping and subjective wellbeing among infertile men and women. T-test and correlations are used for statistical analysis.

Table-1 : Mean, SD and T-score of Perceived Control among Infertile Men and Women

<i>Variables</i>	<i>Infertile men (30)</i>		<i>Infertile women (30)</i>		<i>t value</i>
	Mean	SD	Mean	SD	
Personal control	35.77	6.13	35.46	4.34	.225
Interpersonal control	34.67	6.41	33.93	5.31	.493
Sociopolitical control	29.51	4.51	30.56	3.53	1.01

The mean score of infertile men for personal control, interpersonal control and sociopolitical control are 35.77, 34.67, and 29.51 respectively. The mean score of infertile women for personal control is 35.56, interpersonal control is 33.93 and sociopolitical control is 30.56. The t-value also does not show significant difference between infertile men and women in perceived control.

Therefore, the hypothesis that ‘there is no significant difference between infertile men and infertile women in perceived control’ is *accepted*.

Table-2 : Mean, SD and T-Score of Coping among Infertile Men and Women

<i>Variables</i>	<i>Infertile men (30)</i>		<i>Infertile women (30)</i>		<i>t value</i>
	Mean	SD	Mean	SD	
Engagement coping	57.96	6.92	57.4	6.59	.328
Disengagement coping	45.83	6.65	51.23	6.16	1.98*

* Significant at 0.05 level

Table 2 shows mean, standard deviations and corresponding t-scores of coping among infertile men and infertile women. The mean score of engagement coping of infertile men (57.96) is somewhat equal to the mean score of infertile women; and not many significant differences were found.. The mean score of infertile women (51.23) is greater than that of infertile men (45.83) in disengagement coping and significant at 0.05 level. Therefore, the hypothesis that ‘there is no significant difference between infertile men and infertile women in coping’ is *partially rejected*.

Table-3: Mean, SD and T-Scores of Subjective Wellbeing among Infertile Men and Women

<i>Variables</i>	<i>Infertile men (30)</i>		<i>Infertile women (30)</i>		<i>t value</i>
	Mean	SD	Mean	SD	
Subjective wellbeing	5.22	5.88	55.16	5.89	0.39

Table 3 shows means, standard deviations and corresponding t-scores of subjective wellbeing among infertile men and infertile women. The mean score of total subjective wellbeing infertile men is 55.22 and infertile woman is 55.16. There is no significant difference between infertile men and infertile women in their subjective wellbeing. Therefore, the hypothesis that ‘there is no significant difference between infertile men and infertile women in subjective wellbeing’ is *accepted*.

Table-4 : Mean, SD and T-Scores of Perceived Control among Infertile Men and Women Based on Age (Early/Late)

<i>Variables</i>	<i>Early age (30)</i>		<i>Late age (30)</i>		<i>t value</i>
	Mean	SD	Mean	SD	
Personal control	33.85	5.08	38.65	6.53	2.42*
Interpersonal control	34.28	5.19	34.34	6.75	.626
Sociopolitical control	31.85	3.59	26.92	4.45	2.17*

* Significant at 0.05 level

Table 4 indicates Means, Standard Deviations and corresponding t-scores of perceived control among infertile men and infertile women based on age. (Early/Late) The mean score of personal control at an early age is 33.85 and at a late age is 38.65. The mean scores show differences between early and late aged, infertile people in perceived control. Therefore, the hypothesis that “there is no significant difference between early and late aged infertile people in perceived control” is *rejected*.

Table-5: Mean, SD and T-Scores of Coping among Infertile Men and Women Based on Age (Early/Late)

<i>Variables</i>	<i>Early age (30)</i>		<i>Late age (30)</i>		<i>t value</i>
	Mean	SD	mean	SD	
Engagement coping	57.94	8.02	57.34	4.52	.341
Disengagement coping	52.14	6.46	45.5	6.31	2.11*

* Significant at 0.05 level

Table-5 indicates Means, Standard Deviations and corresponding t-scores of coping among infertile men and infertile women based on age (Early/Late). The mean score of early aged and late aged infertile people for engagement coping is 57.94 and 57.34 respectively. This does not show a significant difference. The mean score of early aged infertile people for disengagement coping is 52.14 and the mean score of late aged infertile people for disengagement coping is 45.5. This shows a significant difference between them. Therefore, the hypothesis that “There is no significant difference between early and late aged infertile people in coping” is *partially rejected*.

Table-6: Means, SD and T-Scores of Subjective Wellbeing among Infertile Men and Women Based on Age (Early/Late)

<i>Variables</i>	<i>Early age (30)</i>		<i>Late age (30)</i>		<i>t value</i>
	Mean	SD	mean	SD	
Subjective Wellbeing		6.20	54.96	5.41	.269

Table-6 shows means, Standard Deviations and corresponding t-scores of subjective wellbeing among infertile men and infertile women based on age (Early/Late). The mean score of early aged infertile people is 55.37 and mean score of late aged infertile people is 54.96. Therefore, the hypothesis that “There is no significant difference between early and late aged infertile people in subjective wellbeing” is *accepted*.

Matrix-1 indicates the correlation between perceived control and coping among infertile men and women. The coefficient of correlation between perceived control and engagement coping is found to be $r = 0.33$ which shows

Matrix-1: Correlation between Perceived Control and Coping among Infertile Men and Women

Variables		Engagement coping	Disengagement coping	Subjective wellbeing	Perceived control
Engagement coping	r	1	0.140	0.341**	0.336**
	N	61	61	61	61
Disengagement coping	r	0.140	1	0.062	-0.087
	N	61	61	61	61
Subjective wellbeing	r	0.341**	0.062	1	0.321*
	N	61	61	61	61
Perceived control	r	0.336**	-0.087	0.321*	1
	N	61	61	61	61

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

a positive high correlation between the variables and the coefficient of correlation between perceived control and disengagement coping is found to be $r = -0.08$ which shows a negative correlation between the variables, but this relation is *not significant*. The coefficient of correlation between perceived control and subjective wellbeing is $r = 0.32$, which shows a *significant* correlation between them. The coefficient of correlation between subjective wellbeing and engagement coping is $r = 0.34$ which shows a *positive high correlation* between the variables and the coefficient of correlation between subjective wellbeing and disengagement coping is found to be $r = 0.06$, which doesn't show a significant correlation. Therefore, the hypothesis that "there is no significant inter relationship between the three variables perceived control, coping and subjective wellbeing in infertile men and women" is *rejected*.

Discussion

In today's modern world, the problem of infertility is increasing and becoming a social concern. The diagnosis of infertility is a heavy stress-giving situation for both males and females alike. It will be difficult for them to perceive the situation and to control themselves. The t-value does not show significant differences between infertile men and women in perceived control. Perceived

control refers to the situational, perceived ability to significantly alter a situation. Such control has been showed to exert a crucial role in people's lives by exhibiting stress-reducing and motivation-inducing properties. Perceived control is the extent to which we believe we have control over a situation. Loss of perceived control can increase stress in a person. It is expected that both men and women do not have a difference in perceived control, when they experience stress. The diagnosis of infertility is a chronic stress giving situation for both males and females. Consistent with the above findings, anecdotal evidence has identified feelings of loss of control as common among involuntarily childless individuals. (Matthews and Matthews, 1986; Sandelowski and Jones, 1986; Mahlstedt, 1985; Seibel and Taymor, 1982; McCormick, 1980; Menning, 1977)

From Table-2, it can be inferred that the mean score of infertile women is greater than that of infertile men associated with disengagement coping. In order to check, the significant differences between the groups, the t-test was employed and found to be significant at 0.05 level. Infertile women show more disengagement coping. Disengagement tackles the person's affective responses to the stressor. Disengagement coping style includes self-blame and/or blaming others, avoiding or denying the issue which in turn has a negative impact on adjustment. Infertile women have high mean scores for disengagement coping. Desire for motherhood is inevitable and almost universal. In some cultures, the construction of feminine identity was typically synonymous with motherhood. There are also some unfortunate, traditional customs in our society which contribute even more pressure on women who suffer from infertility. Because of these reasons, women begin to blame themselves and are not able to perceive the actual problem. Consistent with these above findings, a study by Sciarra (1994) reported that childlessness ultimately results in social stigmatization for infertile women and places them at a risk of serious social and emotional consequences. A study by Fido (2004) claims that psychologically, the infertile woman exhibits significantly higher psychopathology in the form of tension, hostility, anxiety, depression, self-blame and suicidal ideation. A research by Van Balen & Inhorn (2001) found that women, worldwide, appear to bear the major burden of infertility, in terms of blame for the reproductive failure; personal anxiety, frustration, grief, and fear; marital duress, abuse, divorce, polygamous remarriage, or abandonment and social stigma and community ostracism, too.

It is expected that a person's subjective wellbeing level depends on his/her own assessment of their happiness and satisfaction with life. Infertility is a life-altering event. The diagnosis of infertility affects the wellbeing of both men and women in a similar way. The absence of a baby in their life leads to dissatisfaction in both, men and women, in a similar way. Studies show that infertility and its

effects such as frustration, depression, anxiety, guilt and feelings of worthlessness in life affect many infertile people. Negative identity, sense of worthlessness and inadequacy, feeling of a lack of personal control, anger and resentment, grief and depression, anxiety and stress, lower life satisfaction, envy of other mothers as well as the loss of a dream of co-creating, are among the main contributors to the dissatisfaction, 'emotional roller coaster' and a sense of isolation. So, there is no significant difference between infertile men and infertile women in their subjective wellbeing.

The mean scores show a difference between early and late aged infertile people in perceived control. The 'personal control' mean score is low for early aged people and high for late aged. The first diagnosis of infertility is a high stress-giving situation and this can cause loss of control in them. As the age progresses, most people think with a little maturity and are thus in a better position to cope with and manage the situation. So, they have better personal control and they can handle the situation in a better way. Consistent with this finding, Seeman, (2001) in his study, found that individuals with strong personal control beliefs who perceive themselves to be "in control" during the challenge situation exhibited the least reactivity. There is no significant difference between early and late aged infertile people in interpersonal control. Interpersonal control refers to something involving, or occurring among several people. Whether the age groups are early or late ages, infertile people always face some kind of a social stigma. This limits them from interaction with other people in both early as well as late ages in a similar manner. The mean score of socio-political control shows a significant difference. Socio-political control refers to people's belief about their skills and capabilities in social and political systems. (Zimmerman & Zahniser, 1991) The early aged people are more energetic and they involve more in social affairs than older people. Consistent with this finding, Archana Singh and Nishi Misra, (2009) in their study, found that most of the elderly people were found to be average in the dimension of sociability and preferred remaining engaged in social interactions.

Disengagement coping style like self-blame, blaming others, etc. has been used by early-aged people because of matured lack of maturity on their part to focus on the actual problem. Older people, through their greater range of experiences, also may have developed more coping resources and thus they appraise problems as less stressful. Consistent with this finding, studies conducted by Blanchard-Fields, Sulsky, & Robinson-Whelen, (1991) Felton & Revenson, (1987) Irion & Blanchard-Fields, (1987) found that older adults also use less escapism or avoidant coping. Instead they use a similar or higher level of problem-focused coping than younger adults do.

The 't'-value indicates the absence of a significant difference among early and late aged infertile people in terms of subjective wellbeing. In case of young people, they still have hope that someday a miracle will happen and their problems will be solved whereas the older people, will be able to overcome all the hassles of life by a certain age. This may be the reason why early and late aged infertile peoples don't have a significant difference in their subjective wellbeing. Consistent to the above finding, a study conducted by Siedlecki, Salthouse, Oishi, and Jeswani (2014) found that there were no substantial differences in predictors of the different types of subjective well-being across age.

According to expectations, when perceived control increases, engagement coping also increases and vice versa. However, this study shows that perceived control and disengagement coping are negatively related; i.e. as perceived control increases disengagement coping decreases and vice versa. A person with high perceived control can initiate and maintain constructive engagement, deal productively with obstacles and setbacks, maintain an access to the highest quality of problem-solving ability, and focus even under stress, seek help if and when needed, rebound from failure, and can even eventually develop more adaptive strategies. Consistent with this finding, Osowiecki and Compas, (1999) found in their study that *Problem focused engagement coping* was related to lower anxiety/depression symptoms near diagnosis; emotion-focused disengagement coping was related to more anxiety/depression symptoms. The interaction of problem-focused engagement coping and perceived control was a significant predictor of lower anxiety/depression symptoms only near the time of diagnosis. Another study by Dijkstra and Homan (2016) found that strategies reflecting more engaged coping, such as active confronting and reassuring thoughts, were associated with a deeper sense of control and therefore to a better psychological well-being. In contrast, strategies reflecting disengagement coping, such as a passive reaction pattern, palliative reaction, and avoidant behaviour, were associated with less perceived control, which in turn was negatively associated and with poorer psychological well-being.

As perceived control increases then subjective wellbeing also increases and vice versa. Mc Cormick (1980) found that a perceived loss of control over many aspects of life often accompanies the problem of infertility, while most couples feel the effects of this lack of control in their life style and relationship. This leads to poor subjective wellbeing. This indicates that as perceived control decreases, the subjective wellbeing of a person also decreases. It was expected that as the engagement coping increases the subjective wellbeing of the person also increases and vice versa. Those who perceived their infertility problem as

meaningful had a low infertility stress and high subjective wellbeing. On the other hand, those who used active-avoidance coping strategies had high infertility stress and low well-being. With respect to coping strategies, Faramarzi et al. (2013) argued that both, infertile men and infertile women, who use disproportionately maladaptive coping strategies such as escape and avoidance are predisposed to anxiety and depressive symptoms, which is connected to a decreasing subjective wellbeing. Consistent with the above results, some research found that the Focus on Problem explained positively and the Focus on Emotion explained negatively in the SWB.

Conclusion and Limitation

Cousineau, and Domar, indicate that infertility is a major problem in fertility health that has different physical, psychological and social dimensions. Due to an increased global population and increasingly higher ages of marriage, the number of infertile couples is increasing. Infertility is associated with a large number of psychological problems. The childless couple undergo severe distress due to many factors such as their own and family expectations, attitude of the society, at large, towards them and many other issues. As a result, infertility has varied consequences, through its effects on societies and on the lifestyle of individuals. There is no significant difference in perceived control and coping among infertile men and women. Infertile men use engagement type of coping and infertile women use disengagement type of coping. There is no significant difference between early and late aged infertile people in perceived control and subjective wellbeing.

The disengagement coping style is more used by early aged infertile people. In addition, perceived control was found to be positively correlated, both with engagement coping and subjective wellbeing. There are significant relationships between subjective wellbeing and engagement coping among infertile men and women. The study helped to expand therapeutic support to infertile men and women. The findings of the study helped other people in the society to be aware of the problems faced by infertile people. The study has some limitations; this study is restricted to a certain area and institution of Thrissur district; the study included infertile people, only in the age group from 20 to 45 years; the study makes use of only three variables; more variables could have been added for a better understanding of the sample and the sample size was only 60. This investigation was an attempt to make the society aware of the problems faced by infertile people. The project is submitted hoping that it will create new studies in this field.

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The Emerging Blue Economy: Its Development and Future Prospects

Abstract

Oceans cover approximately 71 per cent of our planet's surface. They provide food and livelihood to the major part of the global population and almost 80 per cent of international trade is carried out through water, which makes it a key source for economic development. As a step to preserve these resourceful water bodies, the UN has included marine preservation in its sustainable development goals - SDG14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development." To work towards this goal, the concept of Blue Economy was first introduced in the UN conference on sustainable development in Rio, 2012.

Blue Economy as a concept aims for socio-economic development and the preservation and improvement of several livelihoods while maintaining environmental sustainability of the oceans and coastal areas. It is not limited to just marine products and resources but also encompasses coastal tourism, maritime transport, aquaculture, offshore renewable energy and various biotechnology aspects. Blue Economy has evolved largely from the concept of Green Economy. This article will focus on three basic aspects.

First, the introduction of the Blue Economy and its impact on achieving economic and social tranquillity and a major solution to attain sustainability. Continuing from the evolution of this concept, the second will analyse India's increasing steps in the development of the Blue Economy and its impact on its relations with other countries such as Bangladesh and Small Island Developing States (SIDS). Third, this

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article will analyse the impact of the Blue Economy on a select few nations with growing economies and the challenges the Blue Economy will bring forth. This article seeks to analyse the Blue Economy as an area of development for nation-states to improve society, the environment and individual economic capabilities.

Keywords: *Blue Economy, Green Economy, India, UN-SDG14, Socio-Economic development*

Introduction

A lot is heard about the concept of ‘green growth’ and ‘green economy’, which aims for well-being of humanity and social equity while significantly reducing ecological scarcities and environmental risks. A similar concept of ‘Blue Economy’ was first articulated by Gunter Pauli in 2010 and was officially discussed as a concept at the UN Conference on Sustainable Development in 2012 in Rio de Janeiro. (Doyle, 2018) The term ‘Blue Economy’ is very vast, and it aims for socio-economic development, preservation and improvement of livelihood of people all over the world, while maintaining environmental sustainability of the oceans and coastal areas. In a Blue Economy, the ecological disturbance is reduced to a great level and therefore the economic activity is in parity with the long-term capacity of ocean environments which helps this movement stay versatile and sound. The Blue Economy is understood to be a long-term system that supports sustainable economic growth through ocean divisions and exercises and also at the same time enhances human prosperity and social value while protecting the earth. (DESA, 2017).

India has one of the longest coastlines in the world though neighbouring countries also share it. As a developing economy, it should be using its vast ocean accessibility to its advantage. The Prime Minister of India, Narendra Modi has reaffirmed in his swearing-in speech in 2014 the strategic necessity of developing a Blue Economy and stated that it could be a tool for developing India, and made it a feature of his vision for the sea in Security and Growth for All in the Region – SAGAR. (Doyle, 2018) The Indian Ocean Rim Association (IORA) was also introduced to the concept of Blue Economy in October 2014 at the 14th IORA Ministerial Meeting.

Since the Blue Economy declaration of 2014 by the IORA, all member-states have recognised the need to prioritise it for resolution of issues such as food security, employment generation, poverty alleviation and sustainability of business and economic models in the Indian Ocean. The IORA recognised six aspects as priorities in development of the Blue Economy. These include Fisheries and Aquaculture, Seaports and Shipping, Marine Biotechnology and its research and development, Tourism, Renewable Ocean Energy and Seabed Minerals and

Offshore Hydrocarbons. (IORA, 2017) The awareness created among the littoral states including the islands in the Indian Ocean, concerning the economic potential of the maritime environment, is an important benefit of focusing on the Blue Economy. The government can formulate plans and direct political and economic resources to the region for better administration of the assets of the Indian Ocean. (Doyle, 2018)

India shares the Indian Ocean and the Bay of Bengal with Sri Lanka and Bangladesh respectively. Sri Lanka is a small Island nation located to the south of India, with a sea expanse area figuring almost 7 times more than its land area. Therefore, even though it falls under the specific category of Small Island Developing States, (SIDS) it has a vast scope of developing its economy through the oceans because of its abundantly available resources. Since long, the Sri Lankan waters have been a hub for transportation of narcotics and human trafficking with the help of the local fishermen, waste dumping, unauthorised fishing practices and non-eco-friendly tourism. To overcome these issues and move towards development, Sri Lanka should adopt the practices of SIDS like Mauritius and Seychelles in fishing and tourism policies. (Ranasinghe, 2017)

Similarly, India shares the Bay of Bengal with Bangladesh. The Bay of Bengal is the largest bay in the world, and can be a powerhouse of economy in the next few years. Bangladesh settled its maritime boundary delimitation dispute with Myanmar and India in 2014, after which discussion on the Blue Economy started in the country. The inorganic resources of the Bay of Bengal such as its fish stocks can contribute a great proportion to the country's economy. Bangladesh also ranks 5th in the top 10 countries for its freshwater aquaculture. (Alam, Faller, Karim, & Khurshed, 2017) The first, international, Blue Economy dialogue was held in Dhaka in 2014 and the then Prime Minister Sheikh Hasina became the first head of the state to give a national and international televised speech on Blue Economy. (Patil, 2018) Since it is still in the growing stages, this article will show what steps Bangladesh is taking as of today and is further likely to take in the future. Along with more information about steps the Indian government is taking towards developing its Blue economy this article will focus on the relationship between India and its neighbouring countries namely, Bangladesh and Sri Lanka. It will also show advancements in India's relations with the SIDS namely, Seychelles and Mauritius. Lastly, the article will put forth the challenges faced in achieving the potential Blue economy.

India's Blue Economy

The geopolitical significance of the Indian Ocean Region (IOR) comes from the significant development of Asia in the world economy. More than 60 percent of all oil and oil-based goods are transported through the Indian Ocean regional

waters and more than 70 percent of the worldwide trade movement is carried through the waters of this sea. The Indian Ocean Region is not only the intersection for world trade but is also a rich source for marine resources. Among other countries in the region, India shares a prominent place as the biggest country overlooking the stability and security of the IOR. (Baru, n.d.) With the growing importance of the IOR, the countries whose shore is washed by the ocean formed the IORA for better understanding and mutually beneficial ties between each other. The six priority focus areas of the IORA are:

1. Renewable Ocean Energy,
2. Seabed Minerals and Offshore Hydrocarbons,
3. Marine Biotechnology and its research and development,
4. Tourism,
5. Seaports and Shipping and
6. Fisheries and Aquaculture.

India has the seventh longest coastline in Asia at 8129 km, covering nine states and 2 two union territories. This results in the following two aspects as being the most prominent for Indian economy:

1. Fisheries and Aquaculture
2. Seaports and Shipping (Maritime Services)

1. Fisheries and Aquaculture

Fisheries is a fundamental maritime asset and it shapes the centre of the *Blue Economy*. It is considered as one of the primary assets of the Indian Ocean providing sustenance to a large group of individuals and extraordinarily adding to the employment of waterfront networks. With such an elongated coastline, about 17 per cent of India's population resides in the coastal areas and fisheries and aquaculture provide employment to around 14.5 million people. India produced 11409.45 tonnes of fish in the time-period of 2016-17 as reported by the Department of Animal Husbandry, Dairy and Fisheries of India. Constituting about 6.3 percent of the global fish production, the sector contributes to 1.1 percent of the GDP and 5.15 percent of the agricultural GDP. (NFDB, 2017).

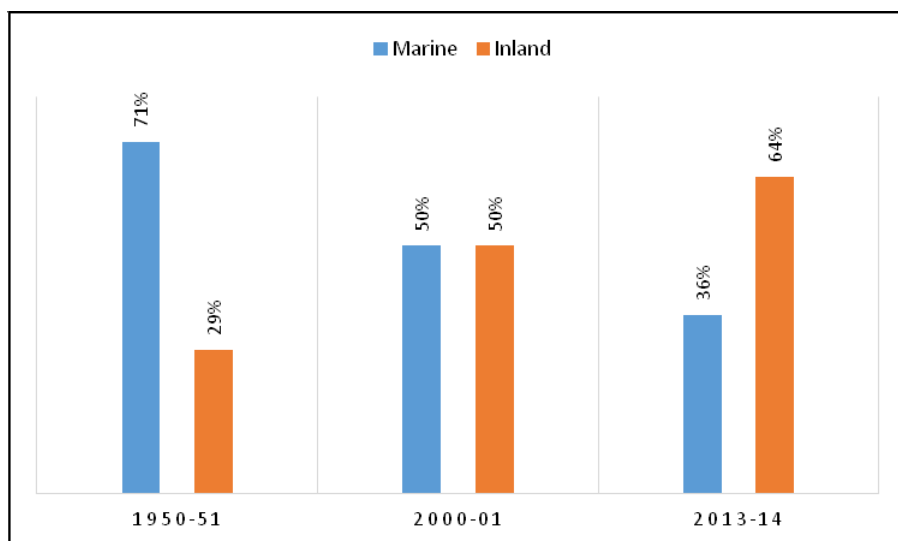
Table-1: Overall Scenario of Indian Fisheries as of 2017

Indian Fisheries	
<i>Global Position</i>	<i>3rd in Fisheries 2nd in Aquaculture</i>
Contribution of Fisheries to GDP (%)	1.07
Contribution to Agricultural GDP (%)	5.15
Annual Export Earnings (Rs. in Billion)	334.42
Employment in Sector (Million)	14.0

Source: NFDB, 2017.

Fish production is mainly of two types: Marine production and Inland production, of which marine fish production is the culture of fishes from the marines and inland fish production includes freshwater and brackish water fisheries. While comparing the shares of both in the total production, we can see a significant shift in India from marine fisheries to inland fisheries. From 1950-1999, for about 50 years, the production of marine fish, of about 0.53 million tonnes in 1950-51, was higher than the production of inland fish, of about 0.21 million tonnes in the same year. However, in 2012-13, the production of inland fish was 5.7 million tonnes, which is significantly higher than the production of marine fish which was only 3.3 million tonnes. (Panda & Panda, 2016).

Table-2: Contribution of Marine and Inland Fisheries



Aquaculture is the cultivation of aquatic organisms in controlled aquatic environments for any commercial, recreational and/or public purpose. The harvesting and breeding of the aquatic plants and animals can take place in all types of water bodies such as lakes, ponds, oceans, seas, and manmade ‘closed’ systems on land. (Commerce, 2011) Aquaculture in India is a booming industry. In the past six decades, India has experienced an eleven-fold increase in fish production. Between 1951 and 2014 the aquaculture production in India has increased from 0.75 million tonnes to 9.6 million tonnes, making India the second largest aquaculture producing nation in the world, second after China. (Agriculture, 2014) In addition to this, India is home to over 10 percent of the global fish diversity with more than 14 million people of the population depending on the fish market domestically. So, the total aquaculture production

in India is at a constant rise, with the majority demographic being from the upper middle class, and an immense opportunity for development of aquaculture, to improve food security and the nutrition level in food intake for a majority of Indians. (Kumar, 2016) Furthermore, the aquaculture production is divided into three sections comprising brackish water aquaculture, marine aquaculture and freshwater aquaculture.

Freshwater Aquaculture: Freshwater aquaculture comprises 50 percent of total fish production in India and covers 2.6 million hectares of ponds. Freshwater aquaculture occurs in paddy fields, lakes and irrigation canals. However, only 40 per cent of the available area is in use because of market access issues. (National Aquaculture Sector Overview, India, 2014) Different species of Indian carp contribute to 75 per cent of India's freshwater aquaculture production; carp such as silver carp, grass carp, and catfish. Freshwater aquaculture production is meant for domestic consumption. (Dong, 2017) The government of India has made it a national priority to produce and cultivate catfish as they provide a vast diversity and production potential in India. (Kumar, 2016) The government has aimed to increase the production to 50 hectares from the current 10, because average yields are increasing on a yearly basis.

Marine Aquaculture: Marine Aquaculture focuses primarily on the production of seaweeds, mussels and oysters. There is also a platform for the production of Seabass and Cobia species under marine aquaculture even though marine aquaculture production is relatively less as compared to freshwater and brackish water aquaculture in India. Regardless, this does not mean that there is no scope for marine aquaculture in India; the production of finfish and shellfish in commercial markets is steadily increasing through cage-based aquaculture production methods. In order to improve the quality of this production method better, to cope with Indian weather, the government or private sector can introduce wave resistant floating cages. The total marine aquaculture production export in 2016 was 5 billion Euros. (Ministry of Commerce and Industry, 2016) This consisted of shrimp to a large extent. One of the largest importers of marine aquaculture from India is the littoral state of Vietnam. (Pijl, 2018) Another area of high profit margins in marine aquaculture is seaweed farming since the input costs are low. The seaweed production is not currently used for commercial purposes because of the low yields and is rather used for bio-fertilizers.

Brackish Water: Brackish water is a combination of salt water and fresh water sources such as estuaries. Brackish water aquaculture production in India focused on shrimp production and it is important to mention that a scientific approach of trapping the shrimp in coastal wetlands was carried out. (Dong,

2017) In 2007, the production of shrimp was at its highest peak at 144 tons per year; however, the shrimp production has steadily been decreasing due to a lack of yield and the fact that shrimp farmers in India own less than 2 hectares of land. (National Aquaculture Sector Overview, India, 2014) Another reason for low yields are due to environmental disease and inter-community predation between tiger shrimp and whiteleg shrimp. Brackish water aquaculture presents a strong export sector. Eighty per cent of all shrimp production is for the export market, and considering the fact that a large amount of land for this aquaculture is unutilised there still exists an investment and growth opportunity in the export market. (Ministry of Commerce and Industry, 2016) Shrimp production in brackish water extends across the Indian Ocean into the Pacific Ocean to the United States and Europe. Since shrimp production is on a rise, more emphasis is being placed on traceability of the production chain, which presents opportunities for foreign investments. This is a sector where India can invite direct, foreign investments for improved production. A reduction in production costs will increase the profit margins for farmers.

Furthermore, India is making aquaculture a pivotal feature of its domestic and foreign policies. The government has founded numerous institutions and research centres in order to gain knowledge in the field of aquaculture. The Indian Council of Agricultural Research has eight fisheries for research purposes out of which three focus on aquaculture namely;

1. The Central Institute of Freshwater Aquaculture (CIFA) in Bhubaneswar, which focuses on freshwater aquaculture,
2. The Central Institute of Brackish Water Aquaculture (CIBA) in Chennai which focuses on brackish water aquaculture and
3. The Central Marine Fisheries Research Institute (CMFRI) in Kochi which conducts research on marine fisheries.

The National Fisheries Development Board (NFDB) based in Hyderabad, which is a part of the Ministry of Agriculture of India, actively provides training, storage, transport and production in the field of fisheries and aquaculture. India recognises the importance of aquaculture and the importance it holds in the emerging Blue Economy of India, and in this aspect, promotes the work of the Aquaculture Foundation of India – a non-governmental organisation which works in the field of fisheries and aquaculture.

2. Shipping and Maritime Services

Shipping is the least expensive method of transport, which conveys 80 per cent of the worldwide stock exchange volume and in 2015, transported 10 billion

tons for the first time. In any case, trade volumes stay enduring and subsequently shipping turns out to be the more essential method for transport for the South Asian nations as these locales are prevalent in merchandise products such as India. In line with the 'Digital India' and 'Make in India' initiatives of the Modi government, India must focus on marine ICTs, shipping and the creation of a knowledge hub for marine research and development.

One of the programmes, such as the Sagarmala venture, propelled by the Ministry of Shipping in India, plays a key role in improvements of the seaports through its broad utilisation of empowered administrations for the modernisation of ports. It also handles the issue of under-utilisation of ports by focusing on their modernisation, proficient departure, and seaside monetary advancements. The administration involved, has assigned over Rs. 3000 billion to support 199 activities under the Sagarmala programme, for execution in the next three years. Of these recognised projects, activities of more than Rs. 1000 billion are now being utilised efficiently. Furthermore, the Union Budget of 2017-18 expanded the assignment to the venture from Rs. 4.06 billion (RE 2016-17) to Rs. 6 billion (BE 2017-18), giving further force to the port-driven advancement and its modernisation.

Under the 'Make in India' programme of the Government, the shipbuilding industry can profit immensely. This industry has a high impact on investment and can speed up the process of modern development simultaneously with its related expansive businesses. In December 2014, India had a little more than 1,200 boats, and this is estimated to cross more than 1,600 in number by the year, 2025. A solid push in India's business shipbuilding and ship fixing segments, which supplements the Sagarmala venture of port advancement, can also possibly bring about a significant monetary change. (Maini & Budhraj, 2016)

For India to facilitate its Blue Economy system, it must give careful consideration to its communication network. For one, ocean courses in the Indian Ocean convey up to 90 percent of India's trade. At present, India has 13 major ports for beachfront as well as international trade. India redefined its maritime strategy in 2015 (Ensuring Secure Seas: Indian Maritime Security Strategy) to expand the geographical extent of its strategic interests by including the Indo-Pacific region, the Red Sea, and South-east Indian Ocean; and to develop its role as a 'net security provider' in the IOR. The quantity of vessels and load movement of India has been expanding reliably in the previous decade, achieving some 1,052.21 million tons in 2014-15. As indicated by the Indian Maritime Agenda 2010-2020, it is forecasted that port limit will increase to 3,130 million 18 tonnes by 2020. (Mittra, 2017).

Given the present government's interest in Foreign Direct Investment, it is normal that the same would be executed for the marine area. In the event that the business reaction to 100 percent FDI in basic segments, for example, aviation and defence is to be viewed as a gauge, it would be a stage, which would be invited in the marine division. A Foreign Direct Investment of up to 100 percent and an expanded shipbuilding and ship fixing approach will give colossal venture openings.

'Project Green Ports' spotlights on sustained growth from an ecological point of view. It intends to introduce 160.64 megawatts of sunlight based and wind based power frameworks at all the significant ports the nation over. The administration has likewise marked a few MoUs with nations, for example, Korea and Egypt for participation being developed of ports, sharing of innovation, labour preparing and stimulating steady growth of sea traffic. These activities demonstrate the priority the government has given to the oceanic area and the desire that it will be a key driver of the Make in India programme. (Royce, 2017).

India, Sri Lanka and Bangladesh: Interconnectivity through Indian Ocean

Among the 64 bays on the planet, the Bay of Bengal is estimated to be as one of the biggest. The littoral states surrounding the Bay of Bengal have a populace of approximately 1.4 billion. It is the sea that forms the north-eastern part of the Indian Ocean; 1,300 miles long and 1,000 miles wide, bordered on the west by Sri Lanka and India, on the north by Bangladesh. (Rahmana, 2017)

Bangladesh: Bangladesh has recently started discussions on the Blue Economy after the resolution of its maritime disputes with Myanmar and India, in 2012 and 2014 respectively. Bangladesh is very new to this concept but has a varied scope in ocean economy because of the abundant resources available to it. The country has a coastline of 710 kms and a sea area of 121,110 km. and it is an established fact that the fish stocks and other inorganic resources in the Bay of Bengal can contribute greatly to the economy of the country. Currently the fish stocks obtained are from the shelf and shallow waters only. No fishing activity is seen beyond that because of their technological backwardness and a lack of vessel capacity.

Bangladesh should adopt techniques such as long line and hook fishing to optimally use its ocean resources. With an abundance of *tuna and hilsa*, (50-60 per cent of the total global catch is seen from Bangladesh) the country can earn great foreign exchange from the export of tuna fillets and other international

produce. In comparison to other countries, the marine biotechnology of Bangladesh is highly promising. Marine biotechnology includes novel pharmaceutical drugs, chemical products, enzymes and other industrial products and processes. (Alam, Faller, Karim, & Khurshed, 2017) It is also gifted with diverse coastal habitats such as mangrove forests, salt-marsh and sea grass beds. Mangrove forests in Bangladesh represent over 3 percent of the total global area of Mangrove forests which ranks 12th in the world. Almost all of these mangroves are located within the Sundarbans, providing a range of ecosystem services (such as carbon sequestration) with benefits beyond the country. (Viridin J Patil, Hussain Colgan & Vegh, 2018).

Bangladesh also has a lot of potential scope in areas such as, Oil, Gas and Minerals Mining, Ocean Renewable Energy, Sea Salt Production, Marine Trade, Shipping and Transport, Marine Tourism, Marine Education and Research, Maritime Surveillance and Marine Spatial Planning. (MSP) The Blue Economy in Bangladesh is still developing at a gradual pace because of the lack of implementation and enforcements of management measures. Another aspect which may hinder the acquisition of ocean resources is the lack of planning to declare and establish Marine Protected Areas (MPA). The Aichi target estimates that by 2020, Bangladesh should allocate 10 per cent of its maritime area for the preservation and protection of its marine habitat and ecosystems. For overall conservation of the marine biodiversity in the Bay of Bengal area, a full proof strategy and its planning and implementation for a MPA is absolutely essential. Bangladesh needs to take necessary steps, quickly in order to match up to the development made by India and Myanmar among other Bay of Bengal countries.

Sri Lanka: Sri Lanka, being an island nation, has a very long coastline of 1340 kms. Its geographical placement gives an advantage to the country's trade policies as it lies close to many major trade routes since ancient times. Having a major geographical and territorial advantage, Sri Lanka's potential in Blue economy is immense, if given accurate implication and strategic planning. The fisheries sector in Sri Lanka contributes to about 1.4 per cent of the national GDP and 5.9 per cent of the GDP of the Northern Province. (Foundation, 2017) Though Sri Lanka was already using its resources effectively, many of them still remain untouched or non-registered. It was reported that poaching causes losses of about 0.1 per cent of the national GDP while the Northern Province bears a loss of 2.1 per cent in its GDP. A lot of developments can also be brought to enhance the Blue Economy of the country and optimally use the abundantly available resources.

Colombo as one of the busiest ports in the region can recommend Triple E class (Economy of scale, Energy efficient and environmentally friendly) vessels

to come into operation. Coastal tourism amounts to 70 per cent of the total tourism infrastructure in the country. Coastal tourism can be extended higher than ever but there must be directions set up in, order to manage the activities and control the nature of administration. Coastal management ought to be a noteworthy part of the Sri Lankan Blue Economic strategy. Producing wave, solar, wind and hydroelectric energy should be a potential area for Sri Lanka as it experiences monsoon twice in a year. Wind directions and the amount of sunlight received by the nation also adds to the process. Following Mauritius and Seychelles, Sri Lanka could also adopt Marine Spatial Planning (MSP) as a tool of Blue Economy. MSP is a *public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that are usually specified through a political process*. Sri Lanka though a member of the IORA has not put forth any activity on the global level to address the worldwide challenge of environment change. As a nation whose 25 per cent populace relies upon ocean economy, Sri Lanka should ideally take strategic measures and initiatives to maintain its Blue Economy. (Ranasinghe, 2017)

Connectivity of the Three Nations

To avoid maritime disputes between the neighbouring countries, the United Nations Convention on Law of Sea (UNCLOS) came up with Exclusive Economic Zones (EEZ). According to UNCLOS:

The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention. The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. (UNCLOS, 1997).

In 2008, Bangladesh went in for arbitration over the delimitation of maritime boundary against India and in conclusion was awarded with 19,467 sq. km out of the total 25,602 sq. km sea area of the Bay of Bengal. Since then, Bangladesh has played an active role in establishment of the 'Bay of Bengal Partnership for Blue Economy' and has organised several workshops as a process of advancing the proposal around the UN Blue Economy Initiative, involving both India and Sri Lanka. Bangladesh also recently organised the first ever, international workshop on the Blue Economy in Dhaka in September 2014 where other Asian countries, namely, India, Maldives, Sri Lanka, Indonesia, Thailand, the Philippines, Cambodia and Viet Nam also placed emphasis on the Blue Economy

and sustainable use of marine resources for inclusive growth. (Rahmana, 2017) The Sundarbans mangrove forests extend from the Hooghly River in India to the Baleswar River in Bangladesh, occupying half the extent at the beginning of the colonial era. Current mangrove loss is reported in the Indian portion of the Sundarbans, while re-growth is actually happening in the eastern region in Bangladesh. On India's part, it proves to be an ignored zone, which is affecting that aspect for neighbouring countries as well. (Patil, Virdin J, Colgan, Hussain, & Vegh, 2018)

Sri Lanka too has a substantial EEZ, which is expected to increase by about 75000 sq. km after further delimitation of the continental shelf. Sri Lanka has shown a promising potential of mineral deposits and oil and gas explorations. India and Sri Lanka, situated as they are, at the head of the Indian Ocean, share the major responsibility of ensuring smooth flow of traffic on the sea-lanes in this region. Outlining India's approach to the region, the Prime Minister's vision of SAGAR can be highlighted. While addressing the issue of bilateral cooperation, each state should have respect for each other's interests without adopting a unilateral approach to contentious issues. There is a possibility of collaboration between NIOT (India) and Ocean University (Sri Lanka) for technical services & solutions for management of ocean resources and environment. (Foundation, 2017) The Government of Sri Lanka must implement and monitor the Trilateral Maritime Strategy between India and Mauritius to establish good environmental governance, regional cooperation, connectivity and capacity building for a common cause. (Ranasinghe, 2017) There is potential for agreeable undertaking in assets of Bay of Bengal area for all three nations, for example, preservation of seaside eco frameworks, prevention of marine contamination, and misuse of sea materials and improvement of sea vitality. Maritime cooperation must necessarily take over the centre stage in emerging maritime order.

India and SIDS

Small Island Developing States (SIDS) are a group of small island countries recognised by the UN, which share similar sustainable developmental challenges. The two SIDS this article is going to be talking about are Mauritius and Seychelles. SIDS face several challenges during the process of achieving sustainable development such as small population number, limited resources, exposure to natural disasters and external shocks, and strong dependence on international trade. Their growth and development is often hampered by high transportation and communication costs, unreasonably expensive public administration and infrastructure due to their small size, and little or no

opportunity to create economies of a larger scale. To achieve sustainable ocean-based economy, it was recognised that sustainable fisheries and aquaculture, coastal tourism, the possible use of seabed resources and potential sources of renewable energy are among the main building blocks. It is often argued by SIDS that they should be referred to as large ocean states because of their EEZ size and importance of seas in their livelihood. (DESA, 2017)

Amongst the IORA, Mauritius and Seychelles have made notable progress. Mauritius considers its Blue Economy as one of the main pillars to achieve economic development and become a high-income economy by 2025. In 2017, the Blue Economy contributed to 10-11 per cent of its GDP. In Seychelles, there is a Ministry of Finance Trade and Blue Economy for which a budget of USD 58,845,066.66 had been approved for its prospects and promotion of the Blue Economy in 2017.

Mauritius: The total economic zone for Mauritius stretches to 1.96 million square kilometres, including a maritime zone of 2.3 million square kilometres and a continental shelf of 396,000 square kilometres. Mauritius and the Republic of Seychelles co-manage this economic zone. There are 5 key areas of investment for Mauritius in the blue economy and they include:

- i. Fishing, seafood processing & aquaculture
- ii. Seabed exploration for hydrocarbons and minerals
- iii. Marine Services
- iv. Ocean Knowledge
- v. Deep Ocean Water Applications (DOWA) (Attri, 2016)

DOWA get significant assets through the cavernous ocean waters by making utilisation of the cold and nutrient rich properties for commercial activities. There are two forms of commercial activities, upstream and downstream. The upstream commercial activities refer to the mining of ocean water to discover and produce green technologies for cooling and production methods. Now downstream commercial activities refer to the vast projects that the nation state of Mauritius has planned for aquaculture such as agrochemicals, and aquatic flora and fauna culture production. (Attri, 2016).

Furthermore, FITECH, (The Fisheries Teaching and Extension Centre) invest largely in training programmes for the development of indigenous fishermen in the area of aquaculture. The investment attributes to improved ports, development of fisheries, and investment in commercial projects. Additionally, Mauritius is concerned about the sustainability of the environment and its blue economy and therefore it has adopted an environment friendly policy since the year 2016 for a *plastic bag-free Mauritius*. (Attri, 2016).

Moreover, Mauritius has expanded the blue economy into the education sector by collaborating with the University of Mauritius on a *capability building workshop* on the Blue Economy as of September 2015. The Chair in Indian Ocean Studies (CIOS) decided that hand-picked topics would be ready for special lectures by the eminent students in those areas (Attri, 2016). Additionally, a Memorandum of Understanding has been agreed upon with the National Institute of Oceanography; in Goa, India, for the development of a Research Institute of Oceanography in Mauritius. A grant of 50 per cent, up to a maximum of Rs 4 million, will be made available to cooperative societies to acquire semi-industrial vessels. Provision is also being made for Rs 12.5 million to finance the purchase of 10 floating cage structures to Fishermen Cooperatives to promote small-scale aquaculture. (Bank, 2017).

Seychelles: The Republic of Seychelles encompasses 115 islands, which are spread over an EEZ of 1.4 million square kilometres. The sea-based region of Seychelles is approximately 99.96 per cent, and the land territory is 454 square kilometre. Similar to the Mauritius, Seychelles in developing the Blue Economy focuses on the specific key aspects:

- i. The creation of high value jobs
- ii. Ensuring food security
- iii. Managing and protecting the marine life environment in a sustainable and responsible manner for present and future generations.
- iv. Economic diversity (Attri, 2016)

Under the current ‘National Development Strategy’, and the ‘Seychelles Sustainable Development Strategy’ (SSDS), 2012–2020, aquaculture and marine assets have been distinguished as the most critical area that must support all future advancement in Seychelles. Undertakings, for example, Fisheries Management Plans and an Aquaculture Master Plan are creating to contribute toward the national advancement process. (Bank, 2017).

Seychelles has raised 15 million dollars by offering the world’s first ‘Blue Bond’, in 2018, raised from investors to finance ocean-based projects, to expand its marine protected areas and boost its fisheries sector. About 12 million from this will be allocated in the form of low interest loans and grants to the local fishermen and the remaining amount will finance research on sustainable fisheries. (Attri, 2016).

India’s Steps: Learning from Mauritius and Seychelles, India may develop a ‘mechanism for financing’ of the Blue Economy within IORA. A joint accounting framework as well as study group may be constituted for a national

accounting framework. India considers Seychelles as a long-term maritime partner as well as a trusted neighbour and friend. Since 2015, both the countries have a joint working group for cooperation in every aspect of the Blue Economy. This will result in several benefits to both countries, such as the increase in the understanding of marine ecology and resources; it will also improve the ability to extract new opportunities that the ocean provides in a balanced and sustainable manner. India considers it a privilege to be Seychelles' partner in the development of its security capabilities. India hopes that Seychelles will soon be a full time partner in the maritime security between India, Maldives and Sri Lanka. India also helps in developing human resources and capability building in Seychelles. PM Modi's statement during the visit was:

Our security partnership is strong. It has enabled us to fulfil our shared responsibility to advance maritime security in the region. Today, I am pleased to announce that we will be giving one more Dornier aircraft to Seychelles. I will have the honour to launch the Coastal Surveillance Radar Project. This is another symbol of our cooperation. These steps will enable Seychelles to secure these beautiful islands and the vast expanse of waters around them. Our agreement today on hydrographic survey adds a new dimension to our maritime cooperation. (Anonymous, 2015).

The relation between India and Mauritius goes way back. Around 68 per cent of Mauritius' population of nearly 1.3 million is of Indian descent. Many are descendants of Indian indentured labour brought to work on sugarcane plantations here in the 19th and early 20th centuries. India and Mauritius agreed to cooperate in the Blue Economy sector in the Indian Ocean during Prime Minister Narendra Modi's visit there in 2015. Modi, in his recent visit to Mauritius, gave similar gestures through the joint commissioning of an offshore patrol vessel (a Barracuda built with Indian assistance) an agreement to develop Agalega Island and a memorandum of understanding (MoU) on ocean economy. (IANS, 2018) Such joint cooperation between member states within the IORA and outside of it will improve overall Blue Economy for the entire world.

The Blue Economy – Challenges

The currently rising Blue Economy will be hindered of its potential due to many reasons. For starters, humankind has always considered the water ecosystem and its resources limitless. Governance of the ocean and its resources has become necessary. The balance between the demanded oceanic resources and their availability is not currently sustainable for the environment. There is over usage of resources due to the constant need of development in countries. Governments are attentive only towards economic development, causing them

to ignore major factors hampering the sustainability of the resources, which include climate change, over-exploitation of marine resources and poor management of fisheries and pollutants in waterways combined with increased emissions of carbon dioxide. (Hasan, 2018)

According to an article by the World Bank, the human impacts that degrade marine resources are:

Unsustainable Fishing and Extraction: These are consequential to poor management of fish stocks and limited access to them because of rising demand and improvement in technology. The Food and Agricultural Organisation estimated that 57 per cent of fish stocks are exploited fully and 30 per cent are over-exploited, recovering or depleted. Primarily, the exploitations take place through illegal, unreported, and unregulated fishing, which amounts to 11-26 million tons of fish catch equal to US\$ 10-22 billion of revenue which is not legal or documented for. (FAO, 2016)

Destruction of Coastal Habitats and Landscapes by Humans: The alterations and unplanned changes as well as unregulated advancements has led to a depletion of coastal habitats. It has had a ripple effect on the loss of dire living societies and marginalisation of poor societies; it has caused huge externalities between the various sectors and multiple uses of the same land and marine areas. Due to activities like mining, deforestation coastal improvement and coastal erosion there has been destruction of livelihood and infrastructure, which has affected marine resources.

Marine Pollution: Accidental or purposely carried out oil spills as well as overfishing cause severe harm to the sea environment and life present in it. Even though shipping is considered to be the most carbon free way of transport, it does emit other greenhouse gases which ultimately harm the quality of the water in the oceans. Marine pollution can be understood with examples, such as excess effluents from untreated sewage and marine debris like plastics.

Unfair Trade: EEZ are crucial to the economies of SIDS and often are vastly larger than their corresponding land mass and government's administrative capacity. (In Tuvalu, for instance, the EEZ is more than 26,000 times the size of the land mass.) In the case of fishing agreements allowing access to an EEZ, there is usually a low appropriation of fisheries export revenues by national operators and insufficient transfer to national stakeholders of specific fishing knowledge by foreign fishing companies; so the potential for national exploitation of these resources is reduced in the long run. (DESA, 2017).

Another major issue is illegal trading practices and human exploitation activities. Countries like Sri Lanka are hubs for narcotic drugs and human

trafficking with the help of fishermen. Lack of strict regulations and/or implementation of the laws on trade and immigration practices of the fishermen make the task easier for traffickers who carry out illegal business and transactions on the oceanic areas. The fishing boats are also susceptible for exploitation by the terrorist group as it did during the civil war.

Tourism also proves to be harmful to some extent to the Blue Economy, especially if carried out carelessly and without thinking about the surrounding marine ecosystem. Smart and sustainable tourism plans are essential for growth of the Blue Economy but, leisure and pleasure activities based in coastal areas which are not eco-friendly to the oceans should be stopped or limited to a certain extent. (Ranasinghe, 2017)

Conclusion

The concept of Blue Economy is fairly new to the world. The United Nations and the countries associated with it are working towards achieving a sustainable economy through ocean systems for the betterment of human existence and the surrounding ecosystems. This article aimed to show where India and 4 other select nations stand at present in developing their Blue Economy. In comparison to the members of the IORA, India is a prominent member making quick and fast changes in its policy towards this economic change. India has given importance to the Blue Economy and is building relations with other countries on the basis of improving the same. It shares notable relations with the surrounding littoral nations;- namely Bangladesh, Sri Lanka and SIDS which are represented by Mauritius and Seychelles. Bangladesh is in the first stages of forming its Blue Economy, and has a lot to learn from the neighbouring countries. Bangladesh is seen as prominent because it has taken various steps to enhance the Blue Economy of not just itself but other countries as well by bridging the gap through workshops and conferences and interdependently working with one another.

On a global level, Sri Lanka, on the other hand is not seen trying to bond with other countries but it is also taking strict action for its own economy, to maintain the name 'Pearl of the Indian Ocean' by working towards a sustainable ocean economy. It has been taking steps to remove the illegal trade activities and inhabitants simultaneously while adding more elements or improving the existing elements in its Blue Economy like the increase in its tourism. All three countries have the Indian Ocean as a common resource and have made cooperative agreements with one another in terms of marine security, and research and development aspects. Mauritius and Seychelles have proved to be very important partners for India in terms of Blue Economy. Both the island

states have worked towards utilising their oceanic resources in a speedy and efficient manner. They have worked towards all the aspects of the Blue Economy and have also brought to the table new innovations within like ‘the blue bond’ for the entire world to use. India and these two countries have combined efforts in terms of securities, technological assistance, building human capacity and tourism aspects. This article tries to show that by working bilaterally and in cooperation with one another, the Blue Economy will be achieved quicker. It also shows the generic challenges that are and will be faced by the nations in achieving the Blue Economy. Necessary measures must be taken by the governments to overcome the challenges and move forward to a better ecosystem.

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Biswajit Mohapatra*

Ethnic Communities and Conflicts in North East India: Building up a Frame work for Conflict Resolution

Abstract

In the last few decades, most of the states in the north-eastern part of India have been experiencing difficult times because of the ethnic conflicts, violence and antagonism among several of the tribes there. No other issue has assumed so serious a concern, in the minds of the intellectuals than the ongoing and seemingly intractable tragedy of ethnic conflicts leading to a high degree of extremist activities and multiplicity of extremist groups. On the one hand, the different ethnic insurgent groups, active here, claim that they are engaged in a fight for recognition, political and economic rights and even for independence sometimes.

On the other hand, others maintain that ongoing insurgent / terrorist activities have continuously challenged the writ of the state and control over its existing territory, governance structures, and the ruling political class. It has been pointed out by various analysts that ethnic unrest can be traced back to its beginnings during the period of colonial rule, in the post-independence era, when governments built the institutions of government control and consolidated power and with the more recent emphasis on greater democratic governance in the region.

As any plural society including India is characterized by some or the other form of tensions, between ethnic groups, cooperative behaviours and consensus decision making perhaps can hold the key to the much desired stability and will prevent any difference from turning into great conflict.

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Key words: *North-East India, ethnic insurgency, intra-state conflict, conflict resolution*

Introduction

The anti-colonial struggle spearheaded by the Indian National Congress aimed at gaining independence, i.e., *Poorna Swaraj* and self-rule, energized several social forces. These were otherwise latent in the Indian society, which remained subjected to the cruel practices in the form of various forms of social discrimination, viz., untouchability, other practices exploiting people belonging to the weaker sections of society, ethnic minorities, women and children alike. Over these long years of the struggle, a passionate urge toward equality and social justice, both in the context of society and polity assumed importance. There was now an increased realization amongst the concerned westernized social thinkers that the New India that was soon to be realized after being granted independence from the stifling hold of colonial rule, must appear to be strikingly different from the old Indian society, bereft of the deeply backward and social practices which had held the people backward and poor.

Hence, for the abolition of political, economic and social discrimination at home, the demand for equality with other nations and races, within our own society and polity powered by the indomitable willpower and courage was deeply felt. These concerns had also been enshrined in our own constitution by our constitution makers and these figures prominently inter alia in the Preamble to the Constitution of India. With the attainment of independence, as every community felt determined to drive maximum gains by their participation in the electoral politics, the divisions within our society came to the fore and these, unfortunately posed serious challenges to the stability and democratic process of the governance in our country.

Social Forces and Ethnic Conflicts

Democracy, much to the contrary of widely held beliefs, instead of uniting the various communities, rather, widened the divide amongst people as the space was already very limited for their zealous participation or for enhancement of their socio economic status and subsequent empowerment. In order to promote their respective community interests, people not only fell upon all the narrow and divisive factors which came handy to them in their quick rush to be the first to derive benefits of the newly launched development schemes but also to keep others out of reach of this so-called development process. The facade of unity witnessed during the Freedom Struggle, gave way to disunity whereby ethnicity amongst others was accorded prominence for strengthening one's claims to a most favourable treatment and was easily highlighted. But, the unfamiliarity

with the European concept of statehood and often ignorance about it, (as this North Eastern Region was governed by Excluded Areas Act and partially Excluded Areas Act) had halted the penetration of British rule into these tribal societies and left them to be governed by their own traditional political institutions under the influence of traditional factors like kinship, etc.

The critical sources of identity and obligation mediated and perfected through the predominance of kinship within the ethnic communities posed serious dilemma for them to accept the statehood in their areas as they discovered their social values were vastly different and hence difficult to reconcile with the level of regimentation that the idea of statehood required. As such the statehood appeared to be not only a recent but an external imposition and was found to be incompatible with the demands of effective governance. Especially for these people, the state as an organization has remained historically alien and to whom personal ties had been all important, the requisite levels of institutional behaviour and the long-term generalized reciprocities that state maintenance required proved to be very farfetched.

However the idea of statehood cherished by the indigenous elites who were waiting to take over from the British colonial rules, their claims and qualifications to rule, the goals that they had set for themselves to achieve and the ideology of anti colonial nationalism that these elites espoused as was seen in the Naga and other tribal communities resistance to British Colonial rule, were certainly bound up with the continuance of the state in the societies. The hurriedness and the sense of eagerness, with which these elites embraced the state, obscured many of the genuine concerns of the greater mass of people in these societies.

The danger that the state might operate disproportionately to the benefit of particular ethnic groups within its territory came to be perceived with the apprehension of a high degree of ethnic conflict for control over the state under the situations of weak social structures and inadequate values. Neopatrimonialism, the maintenance of reciprocal relationships which is typically and essentially of a personal kind between the leaders and the followers within the overall hierarchical structure of the state has been readily adapted to bridge the existing gap in terms of social values by use of short term and individual reciprocities to compensate for the absence of general and long term visions.

Further, this very ideology of state power that these post-colonial rulers the indigenous elites adopted, increased demands on the state and widened the existing gap between promise and performance. The huge wastage of already scarce social and economic capital by misconceived and poorly implemented, ambitious schemes of state-led, nation-building and socio-economic

development schemes forced the deprived and marginalized communities for a rethink. In the last few decades, most of the states in the north-eastern part of India have been experiencing difficult times because of the ethnic conflicts, violence and antagonism among several of the tribes there.

No other issue has assumed so serious a concern, in the minds of the intellectuals than the ongoing and seemingly intractable tragedy of ethnic conflicts leading to a high degree of extremist activities and multiplicity of extremist groups. On the one hand, the different ethnic insurgent groups, active here, claim that they are engaged in a fight for recognition, political and economic rights and even for independence sometimes. On the other hand, others maintain that ongoing insurgent terrorist activities have continuously challenged the writ of the state and control over its existing territory, governance structures, and the ruling political class. It has been rightly pointed out by various analysts, that ethnic unrest can be traced back to its beginnings during the period of colonial rule, in the post-independence era, when governments built the institutions of government control and consolidated power and with the more recent emphasis on greater democratic governance in the region. Further, during the colonial rule, the colonial administration systems, arbitrary delimitation and partitioning of the areas inhabited by different tribes as a result of imperialism and colonial policies adopted by the British surely aggravated the feelings of ethnicity and set off the ethnic conflicts in the region.

Post-Independence Period

In post-independent India, the failure of the state to properly accommodate the competing interests present among the diverse ethnic groups, persistence of low levels of development in the region and the success of previous insurgent movements in creating new Indian states are believed to be amongst the main trigger factors for the appeal of ethnic insurgent movements. The violence involved in these conflicts continues to destabilize entire regions, besides hampering social and economic development and causing unimaginable human suffering. As these conflicts remain unresolved, the search for newer ways of conflict management through negotiation and mediation, for conflict resolution and establishment of a political environment for rapid economic development, in order to seriously engage the various ethnic groups seething with discontent, is insisted to be the most essential item on the agenda. In short, the underlying socio-economic and political dynamics fuel the ethnic conflicts. The ethnic conflicts as such appear to be almost a regular feature of ethnically plural democracies, due to the fact that such different ethnic groups exist and that too, they have the freedom to organize themselves as per the Constitution.

Framework of Consociational Democracy (Power Sharing)

Ethnic identities, such as tribal ethnicities, per se, may not actually be the cause of violence; in fact, they may even co-exist with peace. It is sometimes argued that if ethnic identities could only give way to some other form of less hardening identities, then ethnic conflicts would be less violent. The identities though, are indivisible, yet the fight over resource is markedly seen in case of functional democracies, and is certainly amenable to flexible sharing. In a region which is home to numerous tribes, a suitable deal can be worked out, laying down a plausible formula such as, for example, a 60-40 or 55-45 arrangement, in keeping with the existing percentage of population, for a peaceful resolution of a conflict. It can be felt to be possible. Such bargaining, however to be successful, requires institutional measures, particularly as, this involves sections of different ethnicities. This arrangement also requires a kind of framework agreement amongst the tribes as it has been often said, clashes based on ethnic identities can be said to resist compromise, contributes to arousal of passion, overlooking any reason, and easily generating violence. As such, ethnic peace for all practical purposes will have been conceptualized as an institutionalized channelling and so, a resolution of ethnic conflicts. If the ethnic and national conflicts are eliminated from our midst, a post-ethnic, post-national era can reflect the picture of prosperity in keeping with people's expectations.

Ethnic Conflicts as Intra-State Affairs

In the words of John Paul Lederach, "Most conflicts are intra state affairs."¹ According to Arend Lijphar, in order to be successful and pre-empt ethnic conflict, such pluralist divided societies require elite compromise. "A plural society is defined as one in which the various ethnic groups are segmented and have little criss-crossing."² Such elite compromise can best be assured by a political system that works on intergroup consensus, and not intergroup competition. A consensual democracy of this kind can be called Consociational.³ It is in the manner of a grand coalition of ethnic leaders in leadership positions, a mutual veto given to each group proportionately in decision-making, positions, and segmental autonomy with respect to matters such as education, language and personal laws.⁴ Austria, Holland, Belgium and Switzerland have been heralded as success.

As any plural society including India is characterized by some or the other form of tensions, between ethnic groups, cooperative behaviours and consensus decision making perhaps can hold the key to the much desired stability and will prevent any difference from turning into great conflict. The feeling of mutual security can then generate trust in each other and boost mutual cooperation, albeit through elites rather than reduce it to ethnic democracies.

Notes

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Sanchita Bhattacharya*

Pakistan: Sectarian War Scourging an Entire Nation

Abstract

The world sectarianism is derived from “sect”, which means body of people having varied views within same religion. Since last three decades, sectarianism is damaging the state as well as the society of Pakistan. It has become a peril to the stability of the country. The Ahmadi community, accepted as a minority sect of Islam at the time of the country’s independence, became the first minority group to be targeted for sectarian violence in 1953. Sectarian violence was rife in Pakistan in the 1980s and early 1990s. Besides, on the downhill, the present decade is experiencing continuation of sectarian skirmishes in various pockets of Pakistan – Karachi, Kurram, Jhang, Quetta etc. Religious scholars, lawyers, doctors, government officials, educationist, other professionals, shopkeepers, students, and vendors, all have been targeted in one way or the other due to sectarian differences. The ongoing sectarian skirmish is dividing the already divided population of Pakistan with dangerous ramification. It can be rightly put into writing that common people of Pakistan are living in fear; since last few decades sectarian conflicts have amplified assassination, suicide bombings, bomb blasts, and numerous terrorist attacks.

Key words: Pakistan, Sectarianism, violence, Karachi, Kurram, Jhang, Quetta

Introduction

Pakistan, a country with a rich diversity of people, culture and languages, though multi-cultural to its very core, is however increasingly plagued as a society, by sectarian conflict causing insurmountable rage and violence. The

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combination of lack of representation, poor governance, institutionalised corruption and economic stagnation are compelling ingredients for societal breakdown and disillusionment. The unemployed youth of Pakistan, who see little hope in traditional politics or the way of governance, are fascinated by the missionary zeal of the religious right wing. The rapid growth of Islamic militancy in Pakistan may be a consequence of poor governance and economic stagnation, and in no small measure due to the failure of the international financial institutions to provide firm and consistent support to a Pakistan, geared towards human development, rather than the mere avoidance of loan defaults.¹

Not only the common people of the country, but even the Police and Military establishments have been victims of the deadliest attacks. In terms of sectarian violence, the Shias and the Sunnis have been massacred in the ongoing conflicts. The Shia Muslims face the major brunt from target killing to bombings in various parts of the country. Conflicts occur between Shia and Sunni on one hand, and on the other among the various Sunni sects. These conflicts often characterized politically, are basically an expression of a deeper philosophical confusion as to what constitutes an Islamic state.²

Sectarianism in Pakistan

The concept of *sectarianism* is based on the exclusivist group identity of a religious body that can be classified as a political or military unit. This group identity is imbued with a negative attitude towards its environment, often leading to political and social action in the form of condemnation of, and discrimination or even violence, in contrast to those outside one's community.³ The word *sectarianism* is derived from *sect*, which means body of people having varied views within the same religion. *Sectarianism* means observance of the rules of a particular *sect* or party, especially in a bigoted or narrow-minded way. In sociological studies *sect* is part of a religious study; which means a group split from the mainstream religion on the grounds of doctrine.⁴

Pakistan is confronted with two broad categories of conflicts, namely internal and external which can be still further classified. It is facing the twin menaces of religious extremism and ethnic strife. The real threat to the security primarily comes from "within." The internal terror is caused by banned organisations with strong ethnic and sectarian bias. Areas like, Kurram, Parachinar, Dera Ismail Khan, tribal belt and Southern Punjab are severely affected.⁵ Pakistan is experiencing a sharp escalation in sectarian violence, especially with the rise of Pakistan Taliban in the mid 2000s. Most recurrently, such ferocity involves clashes between members of the Sunni and the Shia communities. But violent incidents between the Deobandi and Barelvi sub-sects⁶ of Sunni Islam are also

on a rise. Besides, various Sufi shrines have also been subject to such violent attacks in Pakistan. The role played by Sufi saints in shaping the intrinsic nature of the Islam religion in the Indian sub-continent can never be denied. Pakistan, being part of this larger area, also exhibits a dominant Sufi history, which is unfortunately, undermined by the 'mainstream' version of Wahhabi Islam.

Since the last three decades, sectarianism is damaging the state as well as the society of Pakistan. It has become a very serious peril to the stability of Pakistan. Its negative effects are destroying the society on many fronts i.e. economically, psychologically, politically and socially.⁷ The sectarian conflict has caused tensions in the southern part of Punjab, Balochistan and also in the urban centres of Karachi and Quetta. The politics of sectarian exclusiveness is becoming mainstream in Pakistan. Rampant violence and killing in the name of diverse religious sects has become a somewhat ongoing trend.⁸ The state has also somehow failed to provide basic safety to its citizens, in terms of conviction of sectarian murders and policy initiatives. No measures were being taken to curb the tide of increasing violence and bloodshed.⁹

Overview

The Shias, who form a minority sect in Pakistan have been worried with religious discrimination even before Pakistan came into existence as a separate state. In fact, immediately after the Lahore Resolution of 1940, which set the ground for a separate homeland for the Muslims of the subcontinent, Shia leaders had asked Muhammad Ali Jinnah for the provision of safeguards for the safety and protection of religious rights of their community in the future Pakistan.¹⁰

The Ahmadi community, accepted as a minority sect of Islam at the time of the country's independence, became the first minority group to be targeted for sectarian violence when anti-Ahmadi riots broke out in 1953 in Lahore, leading to the first imposition of Martial Law in the country's history, limited to Lahore.

With Shias also facing resistance from increasingly vocal Sunni conservatives, two Shia organisations, one a successor to the All Parties Shia Conference (APSC), established soon after 1947 and Idara-e-Tahafuz-e-Haqq-e-Shia (ITHS), established in 1953, became more relevant. Shia landlords in Sindh and Punjab, industrialists from Karachi, and wealthy trading families in Lahore financed both organisations. In 1957, ulema in the two organisations jointly adopted a resolution to demand reserved seats for Shias in national and provincial legislatures. However, the proposal did not receive much support.¹¹

The Ayub era witnessed a shifting dynamic in Shia-Sunni relations. In 1963, Sunni extremists killed more than a hundred Shias in two attacks, one of which

was on a Muharram procession. Government placed restrictions on more processions and persuaded the Shias to limit their Muharram procession routes. This had a major impact on Shia thinking and, accordingly, on the community's organisational politics. Nevertheless, to calm Shia fears, the Ayub Government constituted a government board to consider Shia demands and submit recommendations. The formation of the Pakistan People's Party (PPP) under Zulfikar Ali Bhutto also received a lot of support from the Shia community, as Bhutto was a Shia. The advent of the Imamia Students Organisation (ISO) in May 1972, marked a turning point for the mobilisation of the Shia youth of Pakistan and ultimately led, in some instances, to militancy.¹²

Sectarian violence was rife in Pakistan in the 1980s and early 1990s. General Zia ul-Haq's (governed 1977-1988) policies and legislation aimed at 'Islamising' Pakistan and were formulated in accordance with an orthodox version of the principles of Sunni Islam, to the exclusion of Sunni Barelvis and Shia Muslims. For example, in 1980 Zia imposed a *zakat* (wealth tax) and *ushr* (farming tax) ordinance that contradicted Shia practice and mobilised Pakistan's Shia population for the first time: 100,000 Shias marched on the federal secretariat in Islamabad, forcing the general to repeal the ordinance as it pertained to Shias, but also provoking the ire of hard-line Sunni organizations.¹³ The march of thousands of Shias on the streets of Islamabad was threatening enough to secure exemption for Shias from paying *zakat* and the agreement to this effect between Mahmood Haroon, the then Minister for Religious Affairs and Mufti Jafar Hussain, which came to be known as the Islamabad Agreement.¹⁴

Concerned by the *Shia* rebellion aka show of force, Sunni groups used this Shia refusal to pay an Islamic tax as a chance to brand them as apostates and heretics, a dangerous narrative that still persists among extremist Deobandi Sunni groups.¹⁵ Jaafar Hussain, argued that if Pakistan was to have Islamic law, the Shia should be allowed to follow their own jurisprudence- *Jaaafariya Fiqh* (Jurisprudence), after the sixth Shia Imam Jafar al-Sadiq.¹⁶ This victory, though welcomed by Shia moderates and Pakistani liberals, riled many extremists of both sects- among Shias those who believed in the Islamic revolution, and among Sunnis those who were worried of the newfound Shia assertiveness and wanted Pakistan to be a Sunni state.¹⁷

Zia had already become very unpopular with many Shia Muslims for the execution of Zulfikar Ali Bhutto, who was a Shia, and also for his promulgation of Islamic laws based solely on the teachings of the Hanafi Sunni sect.¹⁸ *Hanafi Fiqh* is the most practicing religious vogue descended from the Hanafi School of Thought, and followed by the Sunni population only. The enactment of the *Hanafi Fiqh* was reprimanded by many Shia scholars during the time of Zia,

and though not riotous at that time, this practice nevertheless ripped the social unity of the two ethnic groups as time passed on.¹⁹

Since the late 1980s, Shias belonging to all walks of life and all ethnic backgrounds have been targeted and killed in every possible way, at every possible place and area in Pakistan.²⁰ Depending upon their political and/or social standing, different Shia groups responded to these difficult conditions in differing ways. Many elite and politically-connected Shias opted to stay publicly silent in order to hold on to their access to the corridors of power, whereas their religious institutions started drifting towards financially advantageous relations with Iran. A minority of the Shia groups took up arms to defend the community and got involved in tit-for-tat terror attacks against Sunni groups involved in the developing sectarian conflict. In the process, Pakistan became a battleground for a proxy Saudi-Iran war in the late 1980s and throughout the 1990s. The rise of the Taliban in Afghanistan after 1994 provided a safe haven for the anti-Shia militants while Islamabad merely observed as the country became engulfed and enflamed in sectarianism. The September 11 attacks temporarily led to an improvement of the situation for the Shias. In the aftermath of the attacks, Pakistan's then-President, General Pervez Musharraf, began his counterterrorism efforts by banning sectarian militant groups of both the Shia and Sunni orientation.²¹ However, not much success was met by this government's efforts.

As evaluated by Moonis Ahmar, the pattern of overall sectarian conflict in Pakistan from 1980 onwards can be broadly divided into four phases. 1985-1995 was characterized by target killing; The mid-90s was mainly dominated by use of hand grenades and time bombs; and from 1997 onwards, the pattern changed to indiscriminate gunfire on citizens and revenge killings of professionals; post 9/11 the element of suicide attacks has been included in the modus operandi of sectarian outfits.²²

Besides, on the downhill, the present decade is experiencing a continuation of the sectarian skirmishes in various pockets of Pakistan - Karachi, Kurram, Jhang, Quetta etc. Religious scholars, lawyers, doctors, government officials, educationists, other professionals, shopkeepers, students, and vendors, all have been targeted in one way or the other for the mere reason of them being Shia. Shias have been attacked in religious processions, they have been dragged off the buses, separated and slaughtered; they have been targeted on their way to pilgrimage; they have been subject to attacks on their way to schools or workplaces, they have been gunned down while offering prayers and they have been attacked while performing their regular day-to-day business.²³

Reasons for the Conflict

The studies of sectarian conflict in Pakistan have focused extensively on macro level phenomena such as Zia's islamisation, the Iranian Revolution, the Iran-Iraq war and finally, the Afghan *jihad* as determining factors in the Shia-Sunni conflict. Although extremely significant in explaining the external influences fuelling the conflict, these analyses leave much to be desired towards understanding the local dynamics of the conflict.

Sectarian groups are always attached to a religious treatise. Due to the narrow-mindedness of religious leaders, the level of bigotry and fanaticism among religious groups in the Pakistani society is slowly mounting. The ongoing impasse in the country is related to the fact that religious intolerance and extremism have obtained militant connotations. Bitter hatred towards members of diverse sects is not only addressed but also overrated. Thus, it has endangered the peace and security of the country.²⁴

It is true that religious segregation and exclusion play a significant role in sectarian violence but the power struggle, political climate, economic gains, and the cultural climate are also key factors that lead to sectarianism. In case of Pakistan, sectarianism had underlying political motives; even the perpetrators mostly used religious tactics to appeal to the people. Contradictorily, Pakistan undoubtedly blames Iran and Saudi Arabia for the sectarian strife since both the countries have funded and trained the people of their side. There are many internal dynamics of sectarian conflicts along with external that need to be understood. For example, the corrupting value system, intolerance towards the differing sects, mal governance and power politics both at local and national level, all of which plays a vital part in sectarian divide.²⁵

It has been argued on various platforms, that sectarian outfits and clerics associated with sectarian mosques are often able to fill a void left by an absentee state and local elite bent on preserving inequality. This may mostly be the case in urbanizing districts in the country. Run-down governance and scarce social services are contributing to the spread of extremism, as extremist groups fill the political vacuum by providing services such as education and natural disaster relief and rehabilitation. The influence of pre-existing local power brokers, such as the landed elite, is being challenged by sectarian clerics, often associated with the militant sectarian outfits operating with their unchallenged impunity.²⁶

The upsurge of sectarian conflict is also closely linked to religious education in Pakistan. Religious seminaries in Pakistan operate on a strictly sectarian basis and continue to impart education along the sectarian lines. *Madrasas* make the main constituencies of religious political parties, *jihadi* groups and sectarian

militant organizations, who look towards the institutions for expanding their respective support bases. *Madrasas* have thus had a great impact on the forte and salient rise of sectarian organizations and Islamic parties in Pakistan.²⁷

From the point of view of resource management, the case of the Shia-Sunni conflict can be identified as a clash of material interests but the roots of the conflict evade socio-economic explanations. The prevailing socio-economic scenario can either worsen or contain violence between the members of the two sects in various contexts but the fundamental underlying antagonism remains. One of the most common indicators of this fact is the active use of religious interpretations to disclose schisms or boundaries by declaring the differing sect as ‘beyond the pale’ of Islam. Thus, by dehumanising the opposing sect to the status of the ‘other’ or ‘infidel’, violence can be perpetrated against it.²⁸

The ongoing sectarian skirmish is dividing the already divided population of Pakistan with resulting dangerous ramifications. The society of Pakistan exemplifies the country’s trend of showcasing the vulgarity of hatred for a fellow human being at the basic level and countrymen in general. In the ongoing scenario, hate and apathy are more profound than human consciousness. The country is facing a serious humanitarian crisis in which a fellow Muslim is willing to cause harm to another, on the basis of difference in religious doctrines. Among various other ills like, ethnic conflict, gender violence, terror attacks etc., sectarian divide has also become a defining and deciding factor for Pakistan’s society and polity.

Epicenters of Sectarian Conflict

Realm of Violence – Karachi: Karachi, which is also known as a ‘Mini-Pakistan’ is a vibrant city; also one of the most dangerous cities in the world, with rapid gun-crime, sky-high homicide rates and growing sectarian conflict for both Shias and Sunnis. The metropolis is also a den for notorious armed groups, further providing a specific character²⁹ to the violence. Sectarian target killing in Karachi often results in revengeful violent acts, causing a never-ending spree of death, adding to the volatile dynamics of the city.

Though most accounts of Pakistan’s first episode of sectarian conflict, targeting the Ahmadis in the 1950s, generally focus on Punjab, Karachi was not immune to this movement. In 1952, riots broke out after the *Karachi Ahmadiya Association* tried to hold its yearly convention in Jahangir Park. Thousands of assailants looted and ransacked Ahmadi business establishments and properties in central Karachi. Following these violent incidents, *Ulama* called for the government to declare Ahmadis as non-Muslims. Also, few incidents of anti-

Shia violence were recorded in the late 1970s in Ali Basti and Old Golimar areas of the city.³⁰

If the turf war in Karachi had remained limited to *Mohajirs* and *non-Mohajirs*, it would have died a natural death. But, Zia in his ‘islamisation’ initiative drove a wedge between the two sects. As a result, Karachi became one of the most prominent focal points of sectarian violence. Also, the Inter-Services Intelligence (ISI), lent a helping hand to the Sunnis by setting up an organisation, *Sawad-e-Azam*, headquartered in Karachi. It was the precursor to the creation of *Anjuman-e-Sipah-e-Sahaba*, later re-christened as *Sipah-e-Sahaba of Pakistan (SSP)*, under Haq Nawaz Jhangvi. Moreover, the funding received by the *madrasas* during Zia rule, also enhanced the sectarian fervour in the city. One of the biggest *madrasas* in Karachi is the *Jamiat-ul-Ulum ul-Islamia* in the *Binori* town of the city. It has been one of the prominent recruitments and training grounds for the cadres and leadership of SSP.³¹ The relocation of large numbers of *Deobandi Ulama* from North India to Karachi after Partition, as well as the *Pashtun* migration to the city contributed to making Karachi a stronghold of *Deobandi* clerics. From the 1980s, *Binori* town has been in the forefront of the sectarian conflict. In 1986, one of its founders Mufti Wali Hasan Tonki issued a *fatwa* of apostasisation against Shias, arguing that they were outside Islam.³²

Much later in 1990, a new sectarian group called as the Sunni Tehrik (movement) was established in Karachi under the leadership of Maulana Saleem Qadri. It needs to be mentioned that in a deadly suicide attack in Karachi, in a religious gathering organised by the Sunni Tehrik on April 11, 2006, its entire leadership was wiped out.³³ The Tehrik has often used its strong-arm tactics to protect the interests of the *Ahl-e-Sunnat wal Jama’at* (Barelvīs) against rival Sunni sects (*Deobandis*, *Ahl-e-Hadith* and *Salafis*). Interestingly, the militant stand of the Tehrik against Saudi-backed groups seems to have earned it the financial support from Iran, causing its turf war with SSP and JuD.³⁴

The more recent patterns of sectarian violence are very different from the original Shia-Sunni violence that occurred until the 1980s, when rival religious processions could break out into mob attacks and riots. Law-enforcement agencies in the city have identified a number of “sensitive areas” as part of their plan to deal with sectarian violence that keeps flaring up in the city every now and then. They have tagged the Shia-dominated *Malir*, *Ancholi*, *Jafar-e-Tayyar Society*, *Numaish* and *Rizvia Society* as areas from where law enforcers expect a reaction if and when a Shia is killed anywhere in the city. Sunni sectarian groups have strong-holds in areas such as *Banaras*, *Nagan Chowrangi*, *Quaidabad*, *Patel Para* and *Tawheed Chowk*. The security officials see strong

footprints of Sunni groups such as Ahl-e-Sunnat Wal Jamaat (ASWJ), formerly-SSP, in all these neighbourhoods.³⁵

But, over a period of time, due to various operations conducted by security agencies, the city is supposedly seeing less and less of sectarian conflicts. Sectarian violence has decreased to a great extent because of the ongoing successful operation against banned sectarian groups in the city. As a result, 2018 was more or less peaceful. Lately, it has also been said that Karachi has been ‘omitted’ from the list of flashpoints of sectarian violence; nonetheless, according to latest reports, there have been some instances of such violence occurring in the city in this phase of 2019.³⁶

The Restive Arena – Quetta: In the restive province of Balochistan, amidst a state of lawlessness and led by the *Deobandi madrassa* network, radicalisation is on the upsurge and sectarian groups have stepped up their activities in the region. The number of sectarian killings has amplified almost exponentially over the past few years in the province. Balochistan is increasingly becoming a nexus for sectarian outfits now. Afghan and Pakistani Taliban, SSP, al-Qaeda, Lashkar-e-Jhangvi (LeJ), ISO, and Sipah-e-Muhammed Pakistan (SMP) are said to have established their respective strongholds in the province. Their presence is the result of Pakistani security agencies pushing them there from Punjab, partly a result of a vast network of *Deobandi madrassas*; as a result of the islamisation policies pursued by the federal state since the 1970s; and also due to the Afghan refugee camps in the province acting as a main source of recruits for the Taliban.³⁷

Quetta, the capital city, also experiences sectarian killings meted out to the minority *Hazara Shia*³⁸ community by various Sunni militant groups. Quetta has become a battlefield or a violent pit of vengeance for the minority *Hazaras*. In a way, the city has taken the shape of a *Hazara* graveyard. Most *Hazaras* reside in this resource rich province. The rampant attacks on these individuals often leave them in a perpetual state of terror and insecurity even within their own *Hazara* neighbourhood. Attacks against the *Hazara* community are getting more rampant and worse, with more and more people dying everyday.

Ethnically Mongolian, *Hazaras* are easily identifiable from the rest of the population. Therefore, ultimately, no place is safe for them. Even if they stay within the confines of the community, entire communities have been bombed by Sunni extremist groups. With a population of about 600,000 in Quetta, the community, whose physical appearance make them easy targets, has been targeted in a sustained campaign of murders and bombings that has claimed at least 509 lives since 2013, according to Pakistan’s National Commission for

Human Rights (NCHR).³⁹ Moreover, people of the community are getting increasingly more alienated due to the Government's neglect and apathy towards them. Recent *Hazara* killings in Pakistan started with the attack on Provincial Education Minister, Nisar Ali Hazara, on October 6, 1999, and has accelerated with time since then.

The relative success of *Hazaras*, both in business and education is also another reason for jealousy and hatred among the other dissatisfied groups in the province, who hold the *Hazaras* a culprit, responsible for their miseries. The *Hazaras* have become an urban elite in a typically impoverished Balochistan where per capita, neither the *Pashtun* nor the *Baloch* can match the *Hazara* accomplishment. Needless to say, that their success has been achieved through hard work and not at the cost of others.⁴⁰

Community leaders say they see little interest from the government in bringing an end to the killings. "If there was an earnest effort to target these groups, I do not think that the area of Quetta could not be kept secure," says community leader Dawood Agha. "If terrorist acts are still happening, then it seems that the government is not interested in acting against the attackers", he added. The government has taken strict security measures in the two main residential neighbourhoods – Marriabad and Hazara Town, where the community resides. The neighbourhoods are surrounded by high concrete walls topped with barbed wire. Entry is strictly controlled. By 8 pm, there is a virtual curfew with all entrances and exits sealed, bar one at each enclave. "We have been imprisoned without having committed a crime," states Agha.⁴¹

The persecution of *Hazaras* is not a new phenomenon. *Hazaras* are historically, residents of Afghanistan, and almost all *Hazaras* belong to the Shia community. Lately, the *Hazaras* are finding themselves at the centre of an extremely volatile region, where the extremist Taliban and other fundamentalist sectarian terrorist groups like LeJ and SSP were already quite active. *Hazaras* have also been a target of ethnic cleansing, targeted killing and genocide in Afghanistan. The *Afshar Operation*, *Mazar-i-Sharif massacre*, the *Rohatak Pass massacre* and the *Yakawlang massacre* of *Hazara* community in Afghanistan can be considered as just the tip of an ice-berg. Theories suggest the persecution of the *Hazaras* in Quetta and other parts of Balochistan are a continuance of these extremist sentiments, given that LeJ, the group claiming responsibility for most of the attacks on *Hazara* community, has had strong ties with al-Qaeda. Moreover LeJ, though considered a terrorist organisation by the Pakistan and U.S. governments, is believed to have some backing among right-wing political parties in Pakistan. The backing may also encompass Pakistan's military, which is to a certain degree busy with its own clandestine operations in Balochistan.⁴²

Since the 1990s, as the Taliban phenomenon gained ascendancy in Afghanistan, the Sunni-Shia conflict in Pakistan has intensified. As the Taliban consolidated power in Afghanistan, Balochistan, with its provincial capital Quetta, became part of a security and economic corridor that bound it to the city of Kandahar, which emerged as the headquarters of the Afghan Taliban. In addition to Taliban influence, the LeJ, have been vocal in their anti-Shia stance. Since the late 1990s, the *Hazaras* have been subjected to a growing number of attacks from religious armed groups in Pakistan, primarily the LeJ.⁴³

The LeJ was formed by Riaz Basra, along with Akram Lahori and Malik Ishaque, as a radical off-shoot of SSP in 1996. The LeJ, a part of a much wider Deobandi movement, aims to transform Pakistan into a Sunni state primarily through violent means. It has links with militant outfits like, *Harkat-ul-Mujahideen (HuM)* and *Jaish-e-Mohammad (JeM)* as well as with the *Taliban* and *al Qaeda*. It is perhaps a result of the Taliban-LeJ collaborative network, that the killings of the Shias in Quetta, after 2001, have taken on an increased impetus.⁴⁴

Since 2012, Quetta's *Hazaras* have been compelled to limit their activities to the Hazara-dominated neighbourhoods of Marriabad and Hazara Town. As a result, they have started facing increasing economic hardships, very little safe access to education, and severe limits imposed on their freedom of movement.⁴⁵

Valley of Death – Parachinar: Parachinar, located in the western flung of Pakistan, is also called "Little Iran". The majority of the town's residents are ethnic *Pashtuns* who belong to the Shia sect. Shia dominated Parachinar in the Upper Kurram Agency remains a principal target for Sunni sectarian terrorist formations. Built by the British Royal Army in the 1890s, the town is the headquarters of the Kurram Agency, housing offices of the political administration, units of the Army and Frontier Corps. Some 58 per cent of its population is Sunni, and 42 per cent Shia (according to the 1998 Census). The majority of Shias live in Upper Kurram, while Sunnis dominate Lower and Central Kurram.⁴⁶

The present cycle of escalation started when three people were killed and 13 others were injured in an attack on a Shia Imambargah on the morning of April 6, 2007. Clashes in Kurram from November 2007 to 2010 left over 3,000 people dead, while thousands of families were forced to flee their homes. Unlike other tribal agencies of erstwhile FATA, the dynamics in Kurram are different because of the sectarian divide and the geo-strategic location of the Agency. Kurram is surrounded by Afghanistan from three sides and has remained in turmoil since 1980, after the Soviet invasion of Afghanistan. It shares the major portion of its borders with the troubled Logar, Paktia, Khost and Nangarhar

Provinces of Afghanistan. The *al Qaeda* and *Taliban* infested Tora Bora Mountain range in the Nangarhar Province shares its boundaries with the Kurram Agency. The Agency also connects the tribal areas of Pakistan to Afghanistan through lower, central and upper Kurram. Crucially, the Thal-Parachinar route is the shortest route to Kabul from Peshawar.⁴⁷ Upper Kurram is inhabited largely by Turis,⁴⁸ who belong to the only *Pashtun* tribe, which is wholly Shia, while Lower Kurram is inhabited by Sunnis, mostly Bangash. There are longstanding disputes over ownership of forests, hills, land and water resources between the Sunni and Shia tribes and sporadic incidents of communal violence have taken place since the 1930s. But, it was the massive influx of Afghan refugees in the 1980s that caused a distortion in the demographic and religious balance of the area. The first large scale attack took place in 1986 when the Turis prevented Sunni Mujahideen from passing through to Afghanistan. General Zia ul Haq allowed a “purge” of the Turis at the hands of the Afghan Mujahideen in conjunction with the local Sunni population.⁴⁹

Muharram in Parachinar has not been a peaceful event since decades. When sectarian conflict was unheard of in other parts of Pakistan, it was rampant in Kurram Agency. This is of course before the advent of the SSP, LeJ and SMP. Crucially, tribes are divided along sectarian lines. Nevertheless, while minor sectarian conflicts have been a routine in each Muharram, Parachinar has seen various changes to its society over the years. In 1982, 1996 and 2007, major sectarian clashes erupted in Kurram Agency, with Parachinar emerging as the epicentre of the violence. In fact, the year 2007 is a significant one in Parachinar’s history. It is the same year when the TTP was formed. But even before, in 2006, the Taliban had penetrated the Sunni areas of central and lower Kurram.⁵⁰

The pre-2007 clashes also witnessed the local tribes, led by local leaders trying to sort out problems and reach a ceasefire amongst themselves. Unvaryingly, this peace would last for the next ten years, as has been the case since the 1970s. The situation has changed in terms of sectarian violence. Ferocity in Parachinar is no more led by the local tribes, and hence, hereafter cannot be settled through local leaders. The entry of militants from outside has altered the condition and also the sectarian equilibrium against the Turi Shias of Kurram. The local Sunni tribes are now armed with Sunni militants of Pakistan and across the Durand Line by the *Haqqani* group.⁵¹

The Shias have been targeted in the Kurram, through targeted killings and economic blockade by the Taliban. They maintain that, because they are stopping the militants from entering Afghanistan, the Taliban are attacking them, while the Sunni groups assert that Iran has provided weapons to Shias in the area.⁵²

The well-known “war” of 2007 to 2010 left over 3,000 people dead and caused thousands of families to flee their homes. It was trailed by a period of relative peace, but in fact the violence and turbulence never entirely abated and now there are signs of serious resurgence, including major targeted attacks against Shias. There is little doubt now that the signs of escalating sectarian violence in Kurram are now being realised. Threats originating across the border in Afghanistan are a very noteworthy reason. The Pakistan Government seems to be unable to deal effectively with this situation at this time.⁵³

While there was a noticeable trend of reduction of sectarian violence in Pakistan over the past few years, Parachinar has been facing the burden of attacks even during this seemingly non-violent period. While Parachinar’s Shia populace has been warned against any involvement in the Syrian conflict, locals have denied any involvement suggesting that the accusations are an attempt at guaranteeing “sectarian cleansing” in a strategically located area.⁵⁴

Rustic Skirmish – Jhang: If Pakistan, must be broken from within by Islamist forces, then the process would start in the belt between Jhang and Bahawalpur, with the ancient city of Multan, at its heart. A certain latent tension between the two sectarian communities has existed in the region for long time. The prevalence of Shia Islam in Jhang and adjoining areas can be traced back to the Abbasid period. Omar bin Hafas, the governor of Jhang was a clandestine supporter of the Fatimid Shias of Persia. He was influential in spreading Shia influence in the areas of Sindh and Shorkot, the latter now a *Tehsil* (subdivision) of the Jhang District. After Hafas, an Ismaili Shia dynasty called the Carmathians set up their government in Multan. It was during this period that the Shia sectarian identity became strongly entrenched in major parts of Southern Punjab including Jhang.⁵⁵ After taking over Multan, Mahmud of Ghazni replaced the Shia Carmathian prince with a Sunni ruler. This was the earliest Shia-Sunni conflict in the Southern Punjab region of the subcontinent. The Sunni government in Multan did not last long and had to be re-conquered by the Ghauri dynasty which reinstated a Sunni rule in the region. However, years of Carmathian rule in Multan and adjoining areas have left a deep Shia impact on the region.⁵⁶

The noble gentry of the region, who generally comprised of Shias of the Turkish, Qizilbash origin, were granted land by the British, while the local peasants belonged to the Sunni community.⁵⁷ The earliest manifestation of political mobilisation to challenge the Shia dominion came in the 1950s when Maulana Ghulam Hussain, a Deobandi cleric started his anti-Shia crusade by openly criticising the political elite of Jhang and accusing them of being feudals and Shias. This mobilisation started the usage of the sectarian card in the politics

of Jhang, but fortunately did not gain the impetus of a large-scale sectarian movement up until the 1980s. This is largely because of the Anti-Ahmadi movement in Pakistan in which both Shias and Sunnis participated.⁵⁸

The anti-Ahmadi campaign around Jhang played a noteworthy role in mobilising the Sunnis of Jhang in voting for Islamist political parties. The overwhelming success of this mobilisation was observed in the 1970 elections. The result of the election was heavily in favour of Sunnis who won most of the seats for the National Legislature. During this stage of the conflict, the sectarian differences between Shias and Sunnis were forgotten after the elections, as the foremost emphasis of all Islamists, whether the Shias or the Sunnis, was to get the Ahmadis declared as non-Muslims. Nevertheless, a major shift in the dimensions of the sectarian conflict in Jhang was observed in the second half of the 1970s. In 1974 the Ahmadis were declared as non-Muslims by the government of Zulfikar Ali Bhutto. This allowed the majority of the Sunnis to divert their hostility to Shias, who were perceived as the new sacrilegious sect after the assertion of Ahmadis as non-Muslims.⁵⁹

Nevertheless, despite sporadic denunciations of the Shias as heretics by Sunni preachers, till the 1980s this tension remained very limited.⁶⁰ During the 1980s, the district of Jhang in Punjab emerged as the nerve centre of sectarian conflict in Pakistan. The economy of the district was largely controlled by feudal landlords, who were mainly Syeds (who trace their origin to Prophet Muhammad) and Shia: the *Siyals*, *Rajooas* and *Shah Jewanis* apart from *Chiniotis*, who had migrated from India during the partition of the subcontinent in 1947. For the apostles of the new Sunni movement, the domination of the majority, the poor Sunnis by the minority, the Shias was an intolerable socio-economic deformity.⁶¹

The upsurge in violent sectarian conflicts in Jhang in the 1980s and 1990s involved assassination of senior political as well as religious leaders; injury and murder; burning of properties and destruction of businesses were rampant. Sectarian killings on a rampant scale actually began with the murders of Ehsan Ellahi Zaheer in 1987 and TNFJ leader Allama Arif-ul-Hussaini in 1988. In 1990, Haq Nawaz Jhangvi, himself, was killed by the Shia militants. During the 90s, Iranian officials also came under the killing spree of sectarian groups. Most prominent was Agha Sadiq Ganji, the Iranian Consular General killed in December, 1990 by Shaikh Haq Nawaz of Jhang. Later in 1997, another Iranian official was killed and the Iranian Cultural Centre in Lahore was set ablaze, by Jhang based SSP militants.⁶²

Vicious sectarian riots erupted in Jhang in the 1990s, further polarising the two sects. The streets which once buzzed with *Heer*⁶³ now resounded with war

cries. In this battle of belief, mostly the ordinary faithful fell from the both sides. Besides being Shias and Sunnis, the deceased were doctors, teachers, engineers, and lawyers. Other than target killing, firing and bomb blasts also claimed many lives and did not discriminate between the mosque and the *Imambargah*. The TV at home and the billboards on the roads indicated the increased influence of religion in the lives of common people while the blast-ripped tickers and blood-soaked newspapers pointed out that man was yet to find eternal harmony.⁶⁴

Besides the political scuffle, among various sects, there are certain practices that the Shias follow which leads to the sectarian tension in Jhang. In the context of Jhang both *Twalla* (recitation of *Darood Sharif*) and *Tabbarra* (cursing the Ummayad Caliphs) produced a series of conflicts. Shias do perform these during Muharram in their gatherings. The Sunnis oppose these practices and their leaders condemn *Shiite*; and curse them along with their *Imams*. Besides, *Twalla* and *Tabbarra* both sects have insignificant differences in other pillars of *Farooq-e-Din* (practices of the religion). Besides all of these issues, there are also some other practices, which caused conflicts in Jhang. These comprise of visiting the shrines of *Peer/Sufi* etc and other stereotypes concerning *Mutta* (marriage for a short or limited time period but with certain conditions) as well as the *Shiite* affirmation of faith (the *Kalama*), all of which are very dissimilar from the Sunni school of thought.⁶⁵

Conclusions

Sectarian conflict is a real menace to the security of Pakistan. It has upset the basic underpinning of the nation and has created disturbance, hatred, violence, and disorder in the society there. Since the last few decades, sectarian conflicts have amplified assassinations, suicide bombings, bomb blasts, and terrorist attacks. Thus, Pakistan has an immediate threat from sectarian strife, along with the above mentioned other disorders.

It can be rightly put into writing that the common man in Pakistan is living in fear for his and his family's life. The sectarian violence is causing terror in all segments of the society, like government employees, students, journalists, traders etc. In some places, as mentioned above, even the daily activities are hampered. People are in constant fear of doing daily mundane chores like going to market places, travelling in public transport or even visiting places of religious worship.

The threat comes more severely from the legal environment of the country, in which violent groups, militants and criminals freely operate due to a lack of threat of punishment from some law enforcing agency. As a result, the sectarian

groups along with other gangs and outfits enjoy absolute impunity and accordingly proliferate freely, without much obstruction or danger.

The militant groups are working to create anarchy and unrest in the country. They mostly want to trigger a reaction and gain political mileage. The tragic reality for the entire nation of Pakistan is the killing of fellow Muslims by one another, that too, in the name of religion.

Also, more tragic is the level of impunity exercised by such elements in their functioning within the social, religious and political framework of Pakistan. Those committing such sectarian crimes are mostly getting away with a series of murders.

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Thinking the Unthinkable: Cyber Attacks on India's Nuclear Assets

Abstract

The high reliance of nuclear weapons on computers has outstretched the susceptibilities of the cyber war against them. While other countries are not discounting the cyber threat against its nuclear weapons, India has officially maintained the position that the present systems and technologies that it is employing, ensures safe handling of its nuclear assets against all cyber-attacks. However, there are certain loopholes in the present C2 structures, which need to be examined and addressed. The cyber threats against the nuclear C2 structures can cause delay in India's response time, in a situation of retaliation. In such a scenario, it would be difficult to absorb the extent of the first strike of the enemy, and the cyber warfare may result in a catastrophic impact on the communication systems. A cyber-attack can also be the cause for technical failures in the civil nuclear program, which may lead to uncontrolled leakage of radiation. This article explores various possibilities of cyber warfare against India's nuclear weapon systems, which can be a serious threat to its critical infrastructure.

Keywords: Nuclear Weapons, Nuclear Security, Cyber war, India, Command and Control Structure, Retaliation

Introduction

Nuclear weapons were developed in 1945 and though they were not immune to cyber threats then, there was an absence of any challenge from the cyber

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domain. However, the integration of the *nuclear command and control* (C&C) structures with computers has given rise to the dependability of nuclear weapons on cyber tools (Gartze and Lindsay 2017, 37) and has raised a new threat perspective that cyber-attacks and warfare can be conducted against nuclear assets as well. The *International Atomic Energy Agency* (IAEA) has acknowledged the seriousness of cyber threats to nuclear weapons. In June 2015, the IAEA hosted an international conference on “Computer Security in a Nuclear World” in Vienna. The IAEA Director General, Yukiya Amano called for an international response to tackle the global threat posed by criminals and terrorists bent on launching cyber-attacks against nuclear facilities. (Donovan 2015) He emphasized on the importance of strengthening computer security capabilities at the State and facility level, to guard against cyber threats that could adversely affect nuclear security. It is an absolute necessity to ensure fool-proof cyber security of the nuclear assets since potential cyber threats could have a security impact upon the nuclear security systems and may damage it. The Director General mentioned:

Strengthening computer security capabilities at the State and facility level, to guard against cyber threats that could adversely affect nuclear security, remains a high priority for the Agency and for Member States. (Director General Statement at High Level Dialogue on Nuclear Security 2017).

Computer security constitutes an important aspect of nuclear security with the newly expanding application of digital systems. With increasing digitalization, India has gradually emerged as a significant target from the cyber security point of view. Digitalization has led to heavy reliance on digital instrumentation or digital control systems or computer based information systems (IS). Further, the dependability of nuclear weapons on C&C structures, which are linked to computers, gives rise to the possibility of a cyber intrusion against them. This development has augmented the threat of compromising nuclear C&C structures.

Recently, several government departments in India have faced repeated cyber-attacks. These departments include the Prime Minister’s Office (PMO), the Ministry of External Affairs (MEA), the Indo-Tibetan Border Police Force, the Defence Research and Development Organization (DRDO) and many other Indian websites (India is quietly preparing a cyber-war unit to fight this new enemy from 2018). According to the 2018 Internet Security Threat Report, “India has emerged as the third most vulnerable country to cyber threats, such as malware, spam and ransom ware, in 2017.” (Bhargava 2018).

With a burgeoning population, increasing internet literacy, expanding critical infrastructure and a rapidly developing economy, India has become vulnerable to cyber terrorism and cyber espionage. As a state with advanced nuclear capability, India is vigilant towards potential cyber threats to its nuclear weapons system. Despite this, there is a huge gap in India's capability and capacity to safeguard against a potential cyber intrusion. The rising magnitude of cyber threats makes it important to safeguard our cyberspace with an anticipation of possible attacks. This paper focuses on the various vulnerabilities existing in India's nuclear assets within the cyber realm. It examines whether India's nuclear forces, particularly its C&C structures are sufficiently protected against possible cyber-attacks.

Meaning and Scope of the Term 'Cyber Warfare'

There has been no definitive explanation of cyber warfare. According to the US Joint Chief of Staff, cyber war is an armed conflict conducted through 'cyber' means to deny the opposing force to make effective use of their cyber space systems and weapons systems. (Joint Terminology for Cyber Space Actions 2010) The *Tallinn Manual of International Law* asserts that a cyber-attack is a cyber-operation (offensive or defensive), that is expected to cause injury or death to people, and/or damage or destruction to objects.' (The Tallinn Manual of International Law 2013) These definitions emphasize that cyber warfare may constitute an intentional offensive act by an adversary to interrupt the cyberspace of the target nation with the intention to achieve the desired political and military objectives. Additionally, there also exist differences among the experts on what the term 'cyber' actually means, which in turn has an impact on the perception, nature and scope of the challenge posed by the cyber threat. The word cyber here focuses on four main areas as explained in the following Table-1.

Figure-1: The Four Main Areas of Cyber

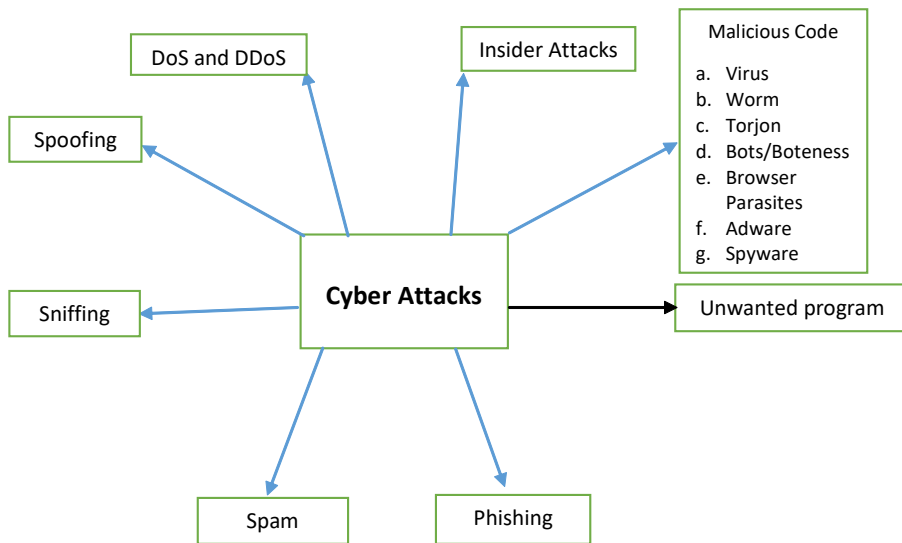
Mechanical Domain	It includes all physical infrastructure and hardware such as wires, computers, communication notes, etc.
Logical Domain	It consists of commands, which tell the hardware what to do and the software that allows transmission, creation and circulation of information.
Information and Data Domain	It incorporates all data that the system collects or stores.
Cognitive Domain	It includes human beings and their interaction with the hardware, software and information

Source: Andrew Futter, "Cyber' semantics: why we should retire the latest buzzword in security studies", *Journal of Cyber Policy*, 3:1, 2018, p. 205.

This means that any kind of cyber challenge may consist of attacks on any of the above four domains. Cyber warfare consists of cyber-attacks and cyber

exploitation. The primary goal of cyber warfare is destruction of websites and generating false information, (Schreier 2015) while cyber-attacks aim for unauthorized access to computers, computer systems or networks to gain information. (Roscini 2014, 134) Evidently, cyber-attacks on nuclear weapon systems can become a stark reality, which the states may ignore only at their own peril. Cyber attacks may not only retard nuclear facility operations, but also compromise critical components within the C&C structures.

Cyberspace suffers from inherent vulnerabilities because of the existence of innumerable entry points into the internet. (Saraswat 2018) With the development of increasingly vulnerable technologies, hackers are regularly seeking unauthorized access to closely guarded information and storming sensitive databases. There are various methods by which cyber warfare can be carried out like denial of service attack, (DoS) malware software attacks, etc as explained in the following Figure-1.



These attacks are enabled when a computer system is exposed to the rest of the world or the inherent flaws within the system are exploited. The problem is that increasing the complexity of the system may not result into protection from cyber war. The more complex the codes are, the more increased possibility of hiding errors.

Such kinds of cyber-attacks may help the adversary to control the information or to influence the information, which may help it in achieving strategic objectives during war. Here, control of information means gaining access of the information about the other party or denying the opponent from accessing its

own information. Influencing the information means providing false information that could cause the radar system to register false positives at times; displaying images/information that actually do not exist. In such situations, the adversary may not be able to detect the invasion of the opponent thus leaving it exposed to a vulnerable position.

A critical issue is that the impact of the cyber war will be temporary. The computer systems, which will be affected by it can be recovered intact at a later stage. However, the after effects of the cyber war will be manifold, especially when they are combined with the kinetic war that the cyber war causes. In the latter case, it could have a devastating impact upon the nuclear weapons capabilities of the opponent state.

The methods mentioned in Figure-1 can prove to be attractive means to rampage nuclear facilities all over the world. The first cyber-attack involving strategic assets took place in October 1979 when the North American Aerospace Defense Command (NORAD) indicated that a missile was launched from a submarine in the waters off the West Coast. (Board 1980, 1183) In recent times, there have been serious incidents of cyber attacks on nuclear and related systems. For example, British researchers discovered in 2012 that Chinese manufactured computer chips used in military weapon systems, nuclear plants, etc, all over the world contain a secret 'backdoor' that could facilitate disabling or reprogramming the chip remotely. (Curtis 2012) In a series of digital attacks between 2009-2010, the *Stuxnet* computer worm that probably arrived at Iran's nuclear plant *Natanz* on an infected USB stick attacked and infiltrated over fifteen Iranian facilities within Iran's *Natanz* nuclear power plant.* Reportedly, the recent hacking into the defence networks and intelligence agencies at the Pentagon by hackers, largely from Russia and China has increased the US concern. (Deen 2015) The most notable case of cyber-nuclear espionage was seen by Israel. In 2006, the Israeli *Mossad* planted a Trojan in the computer of the Syrian government which revealed the nature and extent of their nuclear weapons program. Later, this resulted in *Operation Orchard*, (Follarth and Stark 2009) whereby Israel attacked and destroyed the Syrian nuclear facilities. It has also raised the bar for possible cyber attacks by the Islamic State (IS) that has showed penchant for cyber technology for disseminating their influence on social media.

As opined by the IAEA chief, Amano "reports of actual or attempted cyber-attacks are now virtually a daily occurrence." India is aware of the increasing cyber threats to its critical infrastructure including its nuclear facilities. According to a report prepared in April-June 2018 by the Indian Computer Emergency Response Team (CERT-In), 35 percent of the cyber-attacks that the Indian

cyberspace witnessed came from China (Manral 2018) followed by US (17%), Russia (15%), Pakistan (9%), Canada (7%) and Germany (5%) (China was responsible for over a third of the cyber attacks on many official Indian sites, NSCS informed -2018).

India has hence embarked on a vigorous policy to strengthen its nuclear security systems including its cyber security systems. (Indian National Progress Report 2016) On June 19, 2018, the Department of Defence held a workshop on the development of the Cyber Security Framework. At the inauguration, the Defence Minister, Mrs Nirmala Sitharaman acknowledged that the Defence sector is more prone to cyber threats and hence it becomes important to safeguard our cyberspace with anticipation of possible attacks. (Workshop on cyber security framework 2018) Any incapacitation of critical information databases and/or cyber security within India's Defence sector would pose a serious threat, devastating consequences and compromise India's national security. The Defence Ministry seeks to develop a plan to implement a policy to safeguard the country's cyberspace. A Task Force involving experts from *Industry, Academia, DRDO, and Government* has been set up to chalk out a strategic roadmap for Defence in the area of Artificial Intelligence and Robotics in 2018 (Draft Defence Production Policy 2018). The aim is to provide support to invigorate cyber security infrastructure for the defence sector.

The Possibility of Cyber Attacks on India's Nuclear Assets

Understandably, India has always upheld high secrecy regarding its nuclear weapons and their related C&C structure.** India's nuclear C&C comprises of the scientific establishment, military establishment, and the political authorities and they operate in close coordination with each other.

The uppermost echelons of India's nuclear command and control structure consists of the National Command Authority (NCA, which is further divided into the Political and Executive Councils. The Political Council has the right to take a decision regarding the use of nuclear weapons. The Executive Council provides the essential inputs to the Political Council, which are vital for retaliatory action and execution of the directives of the Political Council. The Strategic Forces Command (SFC) established in January 2003 aims to manage and to administer all these strategic forces. The Political Council could directly contact the SFC in case of a prompt retaliatory action. (The Cabinet Committee on Security Reviews pre-rationalization of India's Nuclear Doctrine 2003).

The Department of Atomic Energy (DAE) and DRDO keep India's nuclear warheads in a de-mated posture. The DAE is accountable to the Prime Minister and the DRDO functions directly under the Defense Minister. (Kanwal 2006)

India's elaborate C&C structures demand a high-level coordination between the DRDO, DAE and the military, both in peace as well as at crisis times. Within the military, there is a close coordination among the Chairman Chief of Staff Committee (COSC), Chief of Integrated Defense Staff (CIDS) and the Commander-in-Chief Strategic Force Command (C-in-C SFC). It is anticipated that this multifaceted nuclear C2 of India has made or is making the nuclear weapons more secure.

India's Nuclear Retaliation

The general procedure to be followed in case of retaliation with nuclear weapons is not available in the public domain. The following interpretations have been drawn from various interviews with army officers, ex-DRDO officials and many other research published in this area. The procedure to be followed is as under:

- The chain of nuclear C&C will flow from NCA to DAE, DRDO and finally to SFC to launch control centres.
- The launch orders are given jointly by two people in India – the Prime Minister and the SFC Commander. (Interview Conducted on 16th May 2018).
- As soon as a first strike is carried out on India, the warning order will be passed to the nuclear forces by the NCP. Simultaneously, efforts will be taken to obtain information regarding the strike and the damage caused by the early information net system.
- This will be followed by the meeting between the PM, Foreign Minister, and the Chairman of the CSOC, in which the decision to retaliate will be weighed upon.
- Once the decision to retaliate has been taken, the PM will send the authentication codes to the nuclear forces.*** The electronic codes received from the PM will be matched by the codes of the SFC, the intermediate control, and LCCs to confirm its authenticity. (Interview Conducted on 16th May 2018).
- Based on the directions received from the COSC through the NCP, the SFC will pass orders for the engagement of targets at LCCs and the Air Force Wings where aircraft for aerial delivery is located. The intermediate control centres will listen in. The orders will be communicated to the Naval Station for the induction of SSBNs.
- A few minutes before the launch, the NCA will forward the codes for unlocking the Permissive Action Links (PALs) in the warheads, which will be communicated to the units concerned. (*Phawa* 2008, 95).

- At LCCs, the codes received by NCA will be matched with the already existing codes. If they match, the order will be considered as authentic. PAL codes for unlocking weapons will be fed into the weapons when received. The drill for launching the weapons will be carried out by two members of the crew in each LCC.
- In case of aircraft delivering the weapons, the authentication codes will be passed to the concerned wing. The warheads will be unlocked and then loaded into the aircraft. The aircraft may remain on the ground or get airborne and move to an RV and await further instructions from the NCP.
- Communications to the SSBN will be dependent on Very Low Frequency (VLF) and Extremely Low Frequency (ELF) and would be routed through navy. Having a PAL system will be difficult for SSBNs because of the long time involved to transmit codes on VLF and ELF. (Phawa 2008, 96).
- Thereafter, the final launch of the nuclear weapons will be conducted.

Noteworthy, India adheres to a NFU policy whereby it will retaliate only after a nuclear, biological or chemical attack has been launched by the enemy. India has reiterated that it will not be the first to carry out a nuclear weapons attack on any of its adversaries. (The Cabinet Committee on Security Reviews pre-rationalization of India's Nuclear Doctrine 2003)¹

Two things are of utmost importance:

1. India requires to be able to assess the degree of danger inflicted by the first strike of the opponent. It is vital for NCA to have information vis-à-vis the numbers, characteristics and deployment of enemy's nuclear weapons, its C&C structure etc. After this, it is crucial to have information about the total weapons, which have survived the first strike. These factors will decide India's retaliatory action.
2. It is assumed that India should be able to retaliate within a particular time frame. Firstly, such a time frame will thwart the chances of accidental or inadvertent use of nuclear weapons. Secondly, soon after the first attacks, there will be international pressure on India not to carry out nuclear strikes on the adversary. Thirdly, a longer time for retaliation raises another fear that an enemy could launch a second attack destroying all the retaliatory capability of India. (Phawa 2008, 101).

These two points prove without a doubt that India needs to have a high level of secure and quick C2 systems to enable successful retaliation. Any

disruption within the C&C system resulting from cyber warfare agents will increase the reaction time of India's retaliation and impede India's military operations. There can be an uncontrolled impact of such cyber warfare and can potentially result in catastrophic attacks upon the critical infrastructure and pose major risks for radioactive and nuclear materials in the nuclear field. It is important to note that such degree of cyber warfare are mostly politically motivated and targeted to cripple a nation.

India's Position on Cyber Warfare against Nuclear Weapons

India has maintained that there are no gaps or any possibility left for having a cyber-warfare against the nuclear assets of India. The reasons given are as follows:

1. The electronic control systems and plant control systems are designed and developed in-house using custom build hardware and software subjected to regular verification and validation.
2. The critical infrastructure of India is isolated from the internet.
3. There is a system of quarterly cyber security audit of DAE, and they submit all their reports to Computer and Information Security Advisory Group (CISAG) of DAE.
4. The DAE also involves Standardisation Testing and Quality Certification (STQC) of Ministry of Electronics and Information Technology to test those systems, which are connected to the internet and where there could be any possibilities of vulnerabilities.
5. The DAE also took part in drills conducted by the Computer Emergency Response Team (CERT) of India to prepare for and to actually face cyber-attacks. (Government of India 2017).
6. Similarly, India has designed safe and reliable designs, that have control and protection features to detect any deviation in plant safety parameters. It has several safety features like even the automatic shutdown of the reactor.
7. Even if, any radioactivity is released, there are arrangements by Emergency Preparedness and Response Emergency Preparedness and Response to protect the people from the harmful radiations. (Government of India 2017).

Despite the vigorous safeguards against potential cyber intrusions, it is undeniable that India is heavily dependent on computer systems and to some extent, the internet in all sectors including defence. Arguably, one cannot stop viruses from entering into cyberspace. The moment one virus is removed, hackers

are already working on it to introduce a different type of virus. So cyber “warfare is a continuum.... it will never stop.” (Bagla 2018) Most equipment and technology for setting up cyber security infrastructure in India are currently procured from global sources. These systems are vulnerable to cyber threats just like any other connected system. Besides, many engineered systems of nuclear weapons are still dependent on digital computational parts that can be hacked easily. Any cyber-attack on such digital infrastructure, which is critical in nature, poses a serious risks to the coordination of the various agencies within the nuclear establishment. It may trigger a false or no information alarm and lead to non-working of the nuclear weapons system. According to Tariq Rauf, director of the Disarmament, Arms Control and Non-Proliferation Programme at the Stockholm International Peace Research Institute, (SIPRI) nuclear power plants and the nuclear industry rely intensively on computer systems and computer codes. (Deen 2015) One can assume, that given India’s dependency on digital technology, it may rely on computer systems and computer codes not only for its nuclear power plants but also for the launching and security of its nuclear weapons. Hence, any targeted attacks through any malware could have catastrophic consequences for both our nuclear safety and security.

While the wave of digital technology has brought in revolutionary changes towards development, it has also resulted in the surge of sophisticated hackers who are being trained to be cyber warriors for various offensive cyber activities like hacking, espionage and intrusion. These hackers sometimes act as lone wolves or are trained by rogue nations to develop innovative methods for launching cyber-attacks on critical infrastructure systems. They attack hardware or firmware, which affects the *root of trust*. Since the security of software is more difficult, hackers find it easier to exploit the lower stack in the technological infrastructure like the physical aspects of computer systems and its components. This way, cyber warriors are able to compromise a system and undermine the core *trust* of the device.

Possible Vulnerabilities of India’s Nuclear Arsenals to Cyber Warfare

A. Systems designed by India to assess the damage of first strike and vehicle transportation systems:

There have been systems in India to read the degree of radiations emitted during a nuclear and radiological emergency. According to the Government of India, there are five main circumstances in which it is assumed that nuclear emergency has been declared:

- An accident taking place in any nuclear facility of the nuclear fuel cycle including the nuclear reactor, or in a facility using radioactive sources.

- A 'criticality' accident in a nuclear fuel cycle.
- An accident during the transportation of radioactive material.
- The malicious use of radioactive material by terrorists for dispersing radioactive material in the environment.
- A large-scale nuclear disaster resulting from a nuclear weapon attack. [(as had happened at Hiroshima and Nagasaki in Japan) (Management of Nuclear and Radiological Emergency)]

Therefore, to respond to any crisis, it is first essential to know that the crisis has actually occurred. For this, India has designed a National Disaster Monitoring System which is dependent upon computers to provide relevant information. The Bhabha Atomic Research Centre BARC has established 24 radiation monitoring centres across the country to provide online information regarding radiation levels at various locations in the country. (ensuring Safety of Professionals) This information is dependent on computers that can be hacked or jammed by the enemy. Under such conditions, it will be difficult for India to access any information. Cyber war against these systems will result in increased time for India to retaliate and impede communication with the DAE. (as it is believed that nuclear attack might disturb other communication means such as telecommunications as well).

The problem becomes more acute when these technologies are used to track the vehicle, which is carrying such radiological materials. Radiological materials are transported during the time of crises, as they need to be assembled for firing a nuclear warhead. For this, GPS systems have been mounted on the vehicles carrying these sensitive materials. (Electronic Tracking for the transport of nuclear and other material) The problem is that GPS systems can be 'spoofed' carrying a satellite causing it to read a faulty data. This may further create problems for India to carry out 'retaliation'. Further, the AERB has mentioned about the existence of the electronic systems to ensure the safe transfer of nuclear material. (Security of Radioactive Sources in Radiation Facilities) Typically, an electronic tracking device is fixed to the vehicle carrying the nuclear material. Electronic tracking uses GPS, satellite communication or cellular general packet radio services. (GPRS) These three systems work together to know the transit of the vehicle. Any disturbance, jamming or faulty information may lead to a 'sabotage' of the radiological items.

B. Pal systems of India

In India, there are 'codes' which are needed to unlock the nuclear weapon system and to mount it on the warhead. However, no open source has mentioned the form of these codes i.e., electronic/non-electronic. The officers working on

the issue have mentioned in questionnaires that these codes are no doubt electronic, something similar to the PAL system of the US.

PAL was designed to prevent the unauthorized use of nuclear weapons. Some of these systems can disable and destroy the nuclear weapons in case of some incidents of tempering. Now, the concern has been mentioned that these systems can be prone to cyber-attacks. PAL codes are entered to arm the weapons and the messages are sent in digital format via the secure Automatic Digital Network and then relayed to aircraft via single-sideband radio transmitters to High-Frequency Global Communications System. It is feared that the PAL systems are prone to cyber-attacks. The questionnaire responded by the anonymous (See Annexure 1) mentioned that India do have a digital code systems on the line of the US. Even, when the nuclear warheads are loaded on the missiles, the codes are used. Under such conditions, the possibility of cyber threats against these codes cannot be ignored.

C. India's nuclear weapons: No longer de-mated

The argument that India's nuclear warheads are in a de-mated status and are not prone to cyber threats is not entirely true. The Kargil Conflict 1999 and the 2001 Parliament attacks made India realize that it needs new institutional procedures for operational readiness. (Kampani 2015, 386) During the *Kargil war*, the civil bureaucracy assumed that India could retaliate within 72 hours. However, the time taken to assemble nuclear weapon was around one week. The 2001-02 crisis also shows an actual gap between the plans and papers concerning operational readiness and the actual possibility of a launch of nuclear weapons. As a result, new protocols have been ensured to address this gap, which states that

1. The first state of nuclear force alteration begins simultaneously with only conventional mobilization.
2. The second stage involves mating of a nuclear warhead with the trigger.
3. The final stage involves the firing of the nuclear weapons. (Kampani 2015, 386).

Further, new missiles like Agni V have the canister system, meaning that India is not entirely following the de-mated system of the nuclear missiles. (India test fires Agni 5 Ballistic Missiles, the trial successful 2018) This factor alone raises the threshold of the cyber-attacks on the nuclear weapons.

D. Hacking of SSBNs system

India's adversaries may have the technique to hack the much-talked about, Arihant missile, which has given India a much-needed nuclear submarine

capability. Nuclear submarines are considered as a vital part of nuclear deterrence because they can stay hidden underwater for a considerable amount of time. Nuclear submarines generally depend on the ELF or VLF radio waves for communications because only very low or extremely low frequencies can penetrate the water at those depths. (Singh and Pal 2003) The adversary may have the potential to hack the transmitters carrying these radio waves. (Futter 2018, 144) This can probably have an impact on the second retaliatory capability and the operations to be carried out by nuclear submarines.

E. Use of space and satellites in nuclear weapons launch

The realm of outer space has increasingly become a part of the nuclear C&C system. (Lele 2011, 290), India is working on the development of the fourth generation GSAT to connect all the three domains that are sea-based assets, (warships, nuclear submarines, and aircraft carriers) land-based assets, (troops formation, conventional war technology, ballistic and cruise missiles) and air force assets. (combat aircraft) (Ehtisham 2018) These kinds of communication satellites help the armed forces to carry out communication between different parts of the C&C structure, which is vital during a nuclear weapons launch.

India is dependent on 13 satellites to carry out remote sensing activities. (Singh 2017) These 13 satellites include the recently launched Cartosat-1, Carosat-2 and RISAT-1 and RISAT-2 satellites. These satellites can be used to detect images during the night. (Cartosat-1: 10 years completion in Orbit from 2005–2015) India has the SAR system, which gives data about weather conditions, terrain features, exact locations of the targets, and information like whether such targets are surrounded by civilian population, and if so, what is the total number of the concentration of civilian population. SAR can help to differentiate between terrain features and actual targets. (Lele 2012) This shows India's dependency on various satellites to carry out and/or perform essential functions in nuclear C&C systems.

India uses satellite, as well as telemetry data during missile flight. According to Rajaram Nagappa, telemetry is a method of onboard measurement of data and its transmission to the ground stations. There are various parameters like pressure, temperature, strain, electric current and voltage, which are monitored onboard and then these are transmitted. This can even include information about the health of the vehicle. It has been mentioned that DRDO makes the onboard computers and these are hence, highly unlikely to be hacked. Further, they run on the *Linux system* rather than *Windows*, which makes them even more secure against cyber threats. However, the possibility of the satellites being hacked

cannot be ignored. Telemetry is also used to analyze whether the missile has followed the designed path and whether it has attained the desired height of burst. Till now, India has used telemetry data for carrying out missile tests. (Kampani 1998) There are incidents in the past where the military satellites were hacked in the US. (Kumar 2018) If the adversary processes the same in India, it could pose several problems ranging from early warning, to detection of targets from the earth and disturbance of the communication systems. This would adversely interfere with the launch of nuclear weapons.

F. Terrorist cyber-attacks on civilian nuclear reactors

The threat of cyber-attacks by terrorist groups is far greater than that compared to cyber attacks by states. The reason is that it requires very little investment and little computer knowledge, which is available easily. In India, such threats are addressed by CISAG that is responsible for conducting audits of information systems, framing guidelines and plans for mitigating cyber-attacks and its effects. (Kazi and Nayan 2016, 28) The use of a USB or external driver is forbidden to secure vital computer systems. In addition, there is limited internet connectivity in the area. However, new hacking techniques have made cyber warfare against these systems, a possibility. (Rajagopalan 2016).

The DAE mentioned that AERB has prescribed necessary codes, guides and other regulatory documents to ensure safety of nuclear weapons. They also have their own licensing systems to ensure safety of nuclear plants. The AERB also conducts regular inspections to monitor compliance with the established regulatory requirements. (Lok Sabha Starred Question No51 2016).

The civilian nuclear facilities of India consist of a large number of computers distributed across the plants. These computers are responsible for performing various functions like protection of the reactor safety, control functions from information collected from displays, etc. If information on these computer systems is hacked by malicious elements, it could lead to severe accidental conditions. (Babu 2013).

There are two main systems for security in any nuclear facility: Instrument and Control Security (ICS) and Facility Network Security (FNS). The ICS ensures safety and controls systems such as the reactor protection system, reactor trip system and power regulation system. The FNS, on the other hand, secures the monitoring network, which has the administrative, and management functions. If there is a cyber-war against these systems, FNS will lead to transmission of data that may be lost or transmitted to external persons. Alternatively, ICS failure could lead to a series of situations including the release of radioactivity. Any modification in the software of ICS will result in problems related to safety.

The safety mechanisms will not be executed at the required rate or in the required response time. (Babu 2013).

The DAE states that in case of any such events, there will be an automatic shutdown of the reactor thus minimizing the chances of spreading radiological emissions. However, their dependence on the computers cannot be ignored. Any delay in the computer system resulting from the cyber-attacks may prevent the shutdown of the system.

G False information through social media to create disturbance

In present times, social media, especially *twitter* has emerged as an important platform for transfer of personal information to the world at large. These accounts are largely not very well protected and it is relatively easy to hack an account and to pass on wrong information, which may create panic and disturbance at large. In short, the risk of 'spoofing' is always present in such systems. For example, In July 2014, the Israeli military *twitter* account handle was hacked and a report was published that a top secret nuclear facility at Dimona had been attacked by rockets which had caused a radiation catastrophe. (Tadeo 2014) Spreading such false information may be more attractive to terrorists.

Emerging Cyber War Threat without the Internet, WiFi or Router

It is a misconception that cyber-attacks cannot happen if a computer is not connected to internet, intranet, WiFi or router. The incident of *Stuxnet* virus on Iranian enrichment facilities have clearly shown that cyber-attacks can be carried out even without the internet. (Zetter 2014) There are six main ways, as mentioned below, through which air-gripped systems can be exploited:

1. Via an 'insider' threat which is perhaps the most important and perhaps the easiest method. Such insider threats can be deliberate or unintentional. (Due to ignorance of the employee or negligence).
2. Through remote maintenance and dial-in ports, i.e. by hacking.
3. By developing and accessing built-in backdoors, remotely. (These may have been developed when the system was manufactured.)
4. By jumping the air gap via other electromagnetic tools.
5. By wiretapping.
6. By intercepting radar and other insecure communications.
7. Exposing the computer systems during upgradation of some software or during the maintenance of the system. (Futter 2018, 102).

Karl Grindal explains an episode of the attack on the US air gripped systems:

In the summer of 2008, an infected thumb drive, possibly dropped in a parking lot or slipped into briefcase, was inserted into a US military laptop on a base in the Middle East. The technically advanced virus stored on the USB stick penetrated the air gap that separates the military's secure networks from the internet at large, infecting both classified and unclassified networks. Once beyond the gap, the malware rapidly replicated throughout the network by inflicting additional thumb drives, leading personnel to unintentionally spread the virus further. (Futter 2018, 65).

Evidently, India's nuclear weapons do face cyber vulnerabilities. In 2016, it was found that Chinese hackers breached sensitive computer systems at the headquarters of the Eastern Naval Command in Visakhapatnam, where the indigenous nuclear submarine, '*Arihant*' has been undergoing sea trials. (Vasudeva 2012) Reportedly, the computer systems of DRDO were breached and some sensitive files were leaked. (Jain 2015) A top defense ministry officer admitted that 'cyber command would ensure both offensive and defensive cyber security capabilities. Issues like cyber warfare, cyber terrorism, and cyber espionage would be taken care of by cyber command.' (Sagar 2014) Given, the vast advancement in cyber technology, India's nuclear weapons remain vulnerable to the following possible cyber-attacks scenarios in future that can damage its critical infrastructure.

- Adversaries may try to hack the nuclear weapons' system of India with an intention to damage it.
- By using cyber warfare capabilities, the adversaries may try to know the exact locations of the weapon system in order to target it first, in the conflict.
- Adversaries may impact the satellite systems thus making it difficult for the nuclear command center to have on the spot communications, selection of target and adversary information.
- There may be intentional hacking of the system to cause a faulty selection of targets.
- There may be an active stealing of India's nuclear data.

Given the threat perspectives, it is of urgent necessity that India develops means to manage and safeguard against cyber threats and maintain the survival of its critical retaliatory capabilities.

Conclusion

The possibility of cyber-attacks on nuclear weapons and its related infrastructure is increasing. The computer systems used across all nuclear weapon

enterprises can potentially fail due to a variety of reasons including as a result of incorrect, incomplete or faulty design and/or manufacture of the key components, various problems with the software or the hardware, coding errors in the software being used like computer bugs and other problems arising due to human interaction with these systems such as maintenance, updating and upgrading. These risks must be considered as important factors while devising current risk management approaches in India's nuclear policies for mitigating all cyber threats. As mentioned by Yukiya Amano, the Director of the International Atomic Energy Agency (IAEA), 'the issue of cyber-attacks on nuclear-related facilities or activities should be taken very seriously. We will never know in certainty if we know everything or if it is just the tip of the iceberg. This is not an imaginary risk.' The intensity of episodes with cyber-attacks on nuclear systems has increased after the STUNEX virus attacks. Recently, in 2014, there have been malware attacks on Japan's Nuclear Power Plant, cyber-attacks on German nuclear systems in April 2016 and hacking of the computer systems of a South Korean nuclear plant in February 2017. (McCurry 2014) India cannot declare itself as an exceptional case, which is foolproof to cyber threats. It is time to recognize the threat and to have a suitable policy to deal with it.

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- * Once inside the computer system, Stuxnet searched for software that controls machines called centrifuges. Once it inserted itself into it, it seized control of the centrifuges and alternatively made the centrifuges spin dangerously fast, for about 15 minutes, before returning to normal speed. Then, about a month later, it slowed the centrifuges down for around 50 minutes. This was repeated for several months. The excessive speeds caused, infected machines to disintegrate. Reportedly, Iran decommissioned around 20 per cent of its centrifuges in the Natanz plant during the attack. See "Timeline: How Stuxnet attacked a nuclear plant," BBC, 2018, URL: <https://www.bbc.com/timelines/zc6fbk7#z32pycw>, accessed 25 August 2018.
- ** There has been no official statement yet on the number of nuclear arsenals or detailed version of the command and control structure. The government to date has provided only the institutional framework. For details, see Ramana MV (2009), "India Nuclear Enclave and the Practice of Secrecy", 2009, URL: <https://www.princeton.edu/~ramana/India-Nuclear-Enclave-And-Practice-Of-Secrecy.pdf>, accessed 18 April 2018.
- *** The COSC will translate the selected option into a specific direction for the engagement of targets and pass it to NCP so that the same can be forwarded to the SFC, the intermediate control centres (formation and unit headquarters) and the Launch Control Centres (LCCs).
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Book Review

Reshmi Kazi and Ashild Kolas, (Eds.) *India in Global Nuclear Governance*, (New Delhi: KW Publishers Pvt. Ltd., 2019), Price: Rs. 620.00, Pages: 152.

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The global nuclear discourse, which is less than a century old, appears to be at a crossroad for a variety of complex reasons. Increasing threats to safety and security of nuclear technology as well as resources during the last few decades are more pressing issues as compared to other factors like proliferation, disarmament, nuclear brinkmanship, etc. However, nuclear energy has evoked a sense of zest, since it has an edge over other forms of energy; around 13 per cent of world electricity is accrued from nuclear sources; radioactive materials are thus, now used in many sectors enriching human life. On the other hand, it has also evoked a sense of fear and disgust due to its use in two nuclear weapons in war and many more are believed to be piled up to be used; three major nuclear accidents have occurred; besides the fear of slippage of nuclear technology/material to the terrorist hands always looms high. Therefore, the balance sheet seems mixed implying that *we succeeded as much we failed with nuclear technology*.

To conclusively argue as to whether we failed nuclear technology or nuclear technology failed us is a matter of pure conjecture at this stage. But it must be acknowledged that nuclear technology or nuclear energy *cannot be ignored* as it has the potential to meet the energy requirements of humanity as a whole. What therefore warranted is a better governance paradigm to address inherent loopholes in the nuclear regimes. This edited volume under review “envisages a more comprehensive and predictable nuclear governance architecture for the future, and discusses how India might play a proactive role in this effort.” (p. xii).

Comprised of seven chapters written by both Indian as well as foreign experts in their respective domains, the editors claim that the book attempts to provide “deep insight into India’s contribution in building and improving sustainable nuclear security architecture as seen from abroad”. (p. xiii) But what is missing, at the outset, is probably a specific chapter outlining the broad contours of the global nuclear governance architecture and discourse, in vogue, to contextualize India’s narrative. Undoubtedly each chapter is arranged thematically addressing specific aspects of global nuclear governance and India; but locating India’s role and concerns within a holistic narrative on global governance structure would have made the flow lucid and complete.

As the contributing authors in the volume and the editors have rightly observed, India has significant reasons to ensure stringent safe-keeping of its nuclear infrastructure. The worsening regional security environment, clandestine proliferation and thriving terror and smuggling networks in the neighbourhood, and above all, the unique nature of its nuclear program, necessitate nuclear security in India to be a priority. India is conscious of the fact that credible threats to nuclear infrastructure exist and it is striving real hard for a semblance of protection in coordination with international agencies and stakeholders; it has undertaken several physical security, technological, and legal measures to strengthen its nuclear security system in cooperation with the international agencies and stakeholders.

However, the editors’ optimism about India becoming a player in, rather than becoming an object of, the world’s export control regime, and consequently India’s “opportunity and space to build a platform for itself as a global player”, in the nuclear safety and security discourse (p. xxi) should be chewed with a pinch of salt. There are huge hurdles to overcome, the editors also agree, which warrants “some truly creative diplomacy to disarm the holdouts,” rightly the editors suggest. India seems positioned a step closer to the NPT-signatory nuclear weapon states in regard to the nuclear ban treaty, while far away from them when it comes to nonproliferation treaty. In regard to nuclear safety-security regime, India is front runner and proactive. It undoubtedly has been a tight rope walk for India at the global sphere.

Domestically, India has managed to lay down a country-wide nuclear infrastructure along with the implementation of “a good system of regulations and procedures. Even so, the situation is not perfect today, and improving it while at the same time, keeping up with the large growth in the nuclear programme, will constitute a big challenge in the years to come.” (p. 19) As far as India’s role in mitigating nuclear challenges is concerned, Roshan Khanijo

in chapter 2 says India can help in many areas with its unique expertise and experience. (p. 30) Regarding the future of global nuclear governance, she pertinently raises the question “why threats like nuclear terrorism and nuclear proliferation still continues?” Should the nuclear governance mechanism be restructured? “Or do we amend the major treaties to incorporate the new members?” (p. 32) Any attempt to tamper with the NPT will open the proverbial Pandora’s Box, leading to more chaos in the governance system in place than is already there. This may be a long-term goal but in the short-term, the imperative “is to innovate and adapt pre-existing measures.”

Kanika Rakhra, in chapter 3, delves into the rationality of NPT regime and how India has been a *de facto* adherent of the regime. India’s “spotless image” provides a correct learning and a “good model for other outlier states to emulate in the years to come.” But the important questions like “Is the NPT past its age?” and “Should there be a new treaty for all?” raised by Rakhra in the beginning remain unanswered. Evidently, the world has not yet found an alternative regime narrative except for the argument of amending the NPT. The predominant argument to address the proliferation menace today is through technological means – proliferation resistant nuclear technology “to ensure that the use of the civilian nuclear fuel cycle remains an unattractive mean to acquire material for a nuclear weapons programme.” (p. 56).

Reynaldo Morales in chapter 4 elaborates various advanced reactor concepts, where the global nuclear future seems to be lying but then, he realistically rules out, that “there is no magic solution to eliminate proliferation risk.” (p. 78) The author unfortunately, missed out a discussion on India’s unique three stage nuclear programme, which is inherently safe-secure and proliferation resistant. Also, a reference to the aims and objectives of India’s centre of excellence – the Global Centre for Nuclear Energy Partnership (GCNEP), could have clearly highlighted India’s future plans in this domain.

Reshmi Kazi, on the other hand, bridging the gap, elaborates the role of GCNEP in its totality, and how it supplements India striving “towards an upgraded nuclear security system, embedded within the framework of a strong nuclear security culture.” (p. 90) Despite India’s good intentions and hard work, it faces the challenges of taking along its neighbor Pakistan for outreach programmes as nuclear safety-security is a common concern. (p. 100) Probably India has to forgo its reactive, defensive nuclear diplomacy and adopt creative and constructive moves to take others along the same path it has chosen. Priyanjali Malik in chapter 6 suggests, “India should not be held back, either by the scatchiness of its dealings with its neighbours, or indeed the raucousness of

its internal democratic debate.” (p. 118) As she rightly points out, India must propagate to break the link between NPT membership and membership of the export control regimes. As France has been accommodated when it was not a part of NPT, India’s case is not that difficult to make.

The last chapter dealing with humanitarian concerns and the nuclear ban treaty argues that it provided India with a “strategic opportunity” and “a platform” to put the pressure on the NWSs. But India’s pattern of participation, in the treaty negotiations gives an impression that India has leaned closer towards the NWSs. India could have lead the initiative instead of leaving the process mutedly to avoid any diplomatic tension. If India “is currently in a unique position to bridge the two camps [NWS and NNWS] and actively contribute to an international nuclear disarmament process”, can it also lead the world nuclear security discourse, to the post-NSS phase? Is there any eagerness in the domestic political leadership level to take the onus and initiative to plan for post-NSS agenda? Can India bring back the nuclear disarmament and nuclear ban debate to the CD framework? There are many more questions than answers, which India and the world, together, are likely to confront in the decades lying ahead.

Overall, the volume is a revisit of the Indian nuclear discourse highlighting how integral it is with the global nuclear discourse currently. The young authors have undoubtedly attempted to focus their issue areas intricately, raising the pertinent questions which the world have no easy answers. I can safely conclude that the volume is a valuable contribution to the existing pool of literature on nuclear security architecture and a must read for scholars and academicians having interest in this domain.

Imtiaz Dharker, *Luck Is the Hook*, (Northumberland: Bloodaxe Books Ltd., 2018), Price: Rs. 969.00, Pages: 127.

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This book under review is the sixth collection of poetry published by Imtiaz Dharker in 2018 by Bloodaxe Books. *Luck is the Hook* is a huge surreal canvas where the author has literally painted with her heart to produce poetry on a myriad of themes ranging from longing for love, to a haunting; from historical to cultural and from personal grief to universal wisdom. The title of the collection is a pure reflection of Dharker's precision and creative inclination for rhyme and rhythm in the creative process, converting simple words into poetry and poetry into painting.

Imtiaz Dharker was born in Lahore, Pakistan and her family shifted to Glasgow, Scotland when she was just a few months old. Though she has lived in many countries, and has been exposed to various cultures, (she even calls herself a '*cultural mongrel*') she denies to be labelled under any kind of compartments. The phenomenon of dislocation and displacement thus finds a vivid treatment at her hands in her various poems.

This collection also commences with a series of poems, wherein Chaudhri Sher Mobarik attempts to pronounce the proper Glaswegian words like '*loch*' and '*hen*'. It is remarkable how an outsider proudly subscribes to the language and code of conduct of the country where he/she has migrated. The act of incorporating the tonal and behavioural changes has not been carried out to show or prove anything to the natives of the particular country to which he/she has migrated, but it is more like proving to one's own self of how one has been able to adopt and adapt, adeptly to the culture of the host country. In all her poems, the idea of journeying and travelling has always been an embellishment of an essential essence that is just hers. Here also, the idea of travelling has not

just been limited to the physical and actual travelling. But here the poems talk about what the process of travelling does to one; mentally as well as emotionally. Travelling as a process is an act of moving forward but paradoxically, it also takes one backward, into the past, down the memory lane. So, it is a kind of time travelling into the past when one is physically in the present and probably moving forward but mentally and emotionally, one seems to be moving backward.

There is also a beautiful portrayal of how our lives are fangled up between two extremes of what we want and what is wanted from us; between what we think and what society wants us to think; and between our silent rebellion and our brutal obedience. Our actions and our behaviour always revolve around the thought of “*log kya kahengey!*” (What will people say!). Out of the sheer fear of what people will say, we end up always, busy playing a role, which is in reality is very much different from our actual selves and what we actually want to do.

‘...and the answer to why
Was always log kya kahengey,
The beginning and the end,
What will people say.’ (Fankle, p. 16)

Poems in the like ‘*Arc*’, ‘*A Haunting*’, and others create an eerie effect on the readers. The existence of several well known haunted places in the Asian regions probably inspired her to create poems which can render a surreal, ghostly experience to the readers. The poems go on to describe incidents when the dead are trying to overcome the gulf between the inanimate and the living world by contacting and falling in love with living beings. Dharker’s previous collection titled “*Over the Moon*”, published in 2014 also dealt with the death of her husband and the loss. Here the same sense of haunting has been extended, even to the extent of haunting of the memories of a loved one who has sadly, passed away. Poems are written in a particular sense of time and space. Here the idea of space gets metaphysical connotations, because loss of someone has been accredited with even the loss of emotional space that was shared with the departed person. She has likened it to the creation of a void in space *sans* (without) warmth.

The phenomena of haunting has also been extended to the haunting of words. She writes,

‘....words are nothing
but gravestones unless they haunt
you day and night....’
(A haunting of words, p. 53)

For Imtiaz Dharker, poetry is all about using the most accurate and the most precise words for conveying what she wants to convey and her words paint a canvas that one can visualise and appreciate. With the use of certain words in poetry, she propels the readers to think about several matters that otherwise, go unnoticed and she raises a pertinent voice over issues which are generally wrapped in silences. Her quest of searching for the right word for her poems is evident from the following lines,

‘...words are the pearl.
Dive for them and we become real.’
(Arc, p. 33)

The current collection of poems is brimming with both historical and political contexts. She was commissioned to write poems on the history of St. Paul’s cathedral when it was bombed during the World War II in the year 1940. With her words she has given a creative edge to an otherwise simple historic event. While describing the incident she writes,

‘...Like a giant boar, pig-ugly, it tore
Out of the sky with its load
Of death....’
(Unexploded, p. 82)

In all the poems pertaining to historic events, she bears the capacity to create a visual image in our minds. Though St. Paul’s cathedral escaped any major damage, miraculously, the readers of her poem can easily experience the horror and gravity of the fateful day’s events. by. The incident when the altar of the church was ruined and when the statues of the cherubs were damaged, is described as follows, later they will recall it.

Like something suspended in time,
Like first love at the last frost fair.
They will say. That was the day. I was there
(The Elephant is walking on the River Thames, p. 62).

Imtiaz Dharker is a versatile artist who is not only a poet but also a painter and a documentary filmmaker. Her versatility and her connection with art are depicted in all her poems, which she has composed in response to the solo exhibitions of several South Asian artists. Her poem thread is in response to Neha Choksi’s multi-channel film installation, which revolved around the idea of an individual and how the formation of one’s individuality is the outcome of one’s own surroundings and one’s own community. Another poem written by Dharker is based on the postcard size paintings of an artist named Risham Sayed.

She has made postcard size paintings of Lahore city which is transforming day in and day out as an advent of innovation and construction taking place in the flick of an eye. Dharker captured the theme and conveyed the idea that postcards and photographs cannot capture the true essence of the city, which is long gone. With the changes taking place in the city, we tend to lose a sense of belonging towards a particular place, which is always evolving and changing. The other artists whose exhibitions have been a source of inspiration for her poetry are that of Mehreen Murtaza, Hetain Patel and Waqas Khan.

Imtiaz Dharker has beautifully dealt with the issue of technology creeping in, into the very fabric of our lives and how it (technology) has brought us closer to each other, close enough to track people from our mobile phones even when they are flying in the air. But the poems in this collection force us to ponder over a compelling question of whether technology is really bringing us closer to people or is it actually taking us away and making us indifferent towards our surroundings. In her humorous poem titled *The Garden Gnomes*, the verses of which are on mobile phones, she has used comedy and a humorous yet subtle tone by writing the following lines,

‘...The gnomes are busy
Watching Games of Thrones,
Jamming buttons on controllers,
Checking their likes on mobile phones....’
(The Garden Gnomes are on their mobile phones, p. 107)

The most poignant characteristic of this collection are the sketches sketched by her. The poems written by her are amplified by her sketches. Dharker has used a black ink pen and a handmade paper for her sketches, which render a unique texture to her drawings. Here, words and descriptions create a brilliant visual image in front of our minds which, at times is in stark contrast with the sketches drawn by her. The sketches do not correspond to one particular poem but at times they all come together and illustrate major themes and concerns handled by her.

Luck is the Hook is a collection, which can leave any reader awestruck with the number of themes that are dealt with by the poet. The image of the hook lingers in the reader’s mind throughout the collection, which shows the dichotomous nature of the hook. When luck is considered as the hook, then it may either bring two things together to bind them or it can even tear two fused things apart.

Yuval Noah Harari, *21 Lessons for the 21st Century* (London: Penguin, 2018), Price: Rs. 799.00, Pages: 352.

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What do we teach the children of the 21st century? How do we combat the increasing emphasis on the gradual shift towards the automation for what were previously mechanical jobs? What will the economy or the political structure look like in the next 50 years? Why is liberal democracy in crisis? Is God back? Is a new world war coming? What does the rise of Donald Trump in the USA signify? Should Europe keep its doors open to immigrants? What should we do about terrorism?

These and many more are admittedly big questions, and *21 Lessons for the 21st Century* is indeed a sweeping book by Dr. Yuval Noah Harari, a professor at Hebrew University of Jerusalem with a Ph.D. from Oxford University in History. In this book, there are chapters on work, war, nationalism, religion, immigration, education and 15 other weighty matters. But its title is slightly a misnomer. Although one will find few concrete lessons scattered throughout, Harari has mostly resisted in giving out handy prescriptions. He however, does go all the way, in describing and connecting the terms of the discussion and giving a well-defined historical, political and philosophical perspective.

Most of us can scarcely bear the costs of examining these inquiries, since we all are tragically enslaved by our day to day mundane activities; we need to get down to business, deal with the children, or care for old guardians. Tragically, history makes no concessions. In the event that the fate of humankind is chosen in our non-attendance, since we are too busy bustling about, trying to nourish and provide for our children – they and we will not be excluded from the outcomes. This is exceptionally out of line, one will say; however, who said history was reasonable?

Harari, in his third book is refreshingly blatant. He starts the book with a poignant note about the likelihood of economic disparities and unemployment that will be caused due to new technological advancements, as *Artificial Intelligence*, AI, takes over the majority of the tasks that were once done by humans: *It is dangerous just to assume that enough new jobs will appear to compensate for any losses. The future is unknown with the advent of these kinds of technology professing social and political damages.*

This book is categorized into five sections, of which the first is the most exciting and pertinent. It concerns the coming innovative changes, which Harari first investigated in *Homo Deus* his second book. A great many people in Wellington, Jerusalem, Congo and New Delhi are just faintly mindful, if by any stretch of the imagination, of the ascent of manmade brainpower and its potential effect on their lives. It is indubitable, in any case, that the technological revolution which has taken full force right now will assemble into a gigantic power in the following couple of decades and will stand up to mankind with the hardest questions of ethics and philosophy we have ever had to answer.

He deploys, for example, a clever experiment to emphasize how far humans have come in creating a global civilization. Imagine, he says, trying to organize an Olympic Games in the year 1200. It was clearly impossible. Asians, Africans and Europeans did not know that the Americans existed. The Mongolian empire did not think any other political entity in the world was even close to being its equal. Not even one country had any national symbolism like a flag or an anthem.

The point is that today's competition among nations — whether on the sports field or the stock markets — represents a global agreement which all of them have undertaken either knowingly or unknowingly and that global agreement makes it easier to cooperate as well as compete. What's more, our worldwide understanding makes it simpler for us to collaborate just as we contend. Remember this whenever we begin to question whether we can take care of a worldwide issue like climate change. Our worldwide participation and collaboration may have made several strides back in the previous two years, however before that, we did step a thousand years forward!

Sprinkled throughout the book is some practical advice, including a three-prong strategy for fighting terrorism and a few tips for dealing with fake news. But, his potential solution to all problems comes down to this: Meditate. Evidently, he is not propagating that the world's problems will vanish, if enough of us start sitting in the lotus position and chanting *Om*. But, he does categorically state that life in the 21st century demands peace and harmony of the mind and body — getting to know ourselves better and seeing how we contribute to suffering in our own lives and those of others.

In a world consumed by information overload, clarity is the only thing guiding us, Harari is additionally more aware than most about the dangers of ‘*algocracy*’ (A. Aneesh, the author of *Virtual Migration* (2006), coined this word as against bureaucracy, first putting forward the concept of “algocracy”, which is now widely used, to convey the growing importance and threat of algorithms in social life.) He elaborates on the circumstances that emerge when we delegate choices to machines, since they are supposedly better and definitely more efficient than the ones that we make. He says, “When we start to rely on AI to choose what to think about, where to work, and who to wed, human life will stop to be a show of basic leadership.” For example, envision Anna Karenina taking out her cell phone and asking for a Facebook calculation as to whether she should remain wedded to Karenin or run off with the dashing Count Vronsky; this case scenario, where algorithms are assumed as being capable of making such personal decisions as to whom to get married to, could have pernicious effects on the human psyche. Warning about ‘*algocracy*’, he recommends that people could end up as minor “information cows” if information was distorted to win the elections in certain countries and influence ordinary people to sway to popular opinions just by the means of a few algorithms.

Harari is a liberal and a true globalist, calling attention to sensible worldwide issues. He depicts the EU as a “*marvel machine*”, which *Brexit* is tossing a spanner into. He does not consider patriotism to be an issue in itself, despite the fact that he sees that for a large portion of our history, we have not had countries, and that they are unnatural things and difficult to construct, deconstruct and/or resurrect. Indeed, he supposes they can be certain, that no matter how the issue begins, amiable enthusiasm transforms into petty ultra-patriotism.

The writer cogently describes the hypocrisy of fundamentalist extremists by citing several recent examples. For instance, he notes in the book that the Islamic States killed a great many individuals, toppled archeological places and wrecked every indication of Western social impact in the wake of vanquishing portions of Syria and Iraq. Harari then includes that similar contenders denied supplies of American dollars, which had the faces of American presidents. They did not destroy the dollars as they realized their significance in the international markets, despite the fact that the notes celebrated American political and religious beliefs. Harari recommends that religious fundamentalists and dogmatists also have a plan at play. Regardless of whether it is an Islamic State, North Korean dictators or Mexican mafia, all bow before the almighty dollar.

However, the chapter on community was a little disappointing. Harari argues that social media, including Facebook have contributed to political polarization

by allowing users to cocoon themselves, interacting only with those who share their views. It is a fair point, but he also undersells the benefits of connecting family and friends around the world, which, on the other hand, is totally unfair. He also creates a *straw man* by asking outright, whether Facebook alone can solve the problem of polarization. Answering that, on its own, of course it cannot — but that's not surprising, considering how deep the problem cuts. Governments, civil society and the private sector all have a role to play, and I wish Harari had said more about them and included it in the book to make it more interesting and complete.

As pointed out earlier, Harari contends that online networking websites including Facebook have added to political polarization by enabling users to casing themselves, associating just with the individuals who offer a perspective very similar to that of their own. It is a reasonable point, yet he does not credit the advantages of connecting family and companions the world over, which is an undeniable fact. He likewise makes a straw man by asking whether Facebook alone can tackle the issue of polarization. All alone, obviously it can't — however that is not astonishing, considering how profound the issue cuts. Governments, corporations and the citizens all have a task to carry out, and I wish Harari had said all the more regarding their contribution.

Overall, it's a compelling read with chapters raging from Nationalism to Meditation. It provides a deep insight into how Harari perceives the world around him and his thoughts on what our society may look like in the coming years without sounding apocalyptic. He presents a fair understanding of all domains of human interests in a thought-provoking depiction of changing global dynamics and Human sensibilities.

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