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The Realpolitik of Economic Welfare [Observations on Democracy, Arrow's Impossibility Theorem and The Paretian Liberal Paradox in the Indian Context]

Sorab Sadri

Institute of Management Studies, Baddi University, Baddi, Himachal Pradesh

Cell:+91 8437162591 E-Mail: sorab.sadri2010@gmail.com

Abstract

This paper begins by painting the socio-political and economic map of Indian democracy in 2008. Accordingly, the paper posits six basic positions and six argumentative premises. Cataloguing a series of economic issues the paper clearly states that the twin evils of uneven distribution of income, wealth and opportunity on the one hand and the unequal development of peoples, sectors and regions on the other continued to plague Indian planners sixty one years after the country got rid of its colonial yolk. It attempts to explain the impossibility theorem of Arrow, the optimality issues of Pareto and Sen's liberal paradox. In the process, it tables a realpolitik of welfare in Indian conditions and takes the candid position that rational choice for voters in a multi-party parliamentary democracy is just not possible. Hence, the right candidates may never be elected. If the threshold of welfare is to be raised and the quality of life is to improve, the paper argues, India must ideally though not necessarily move from parliamentary system to a possible and preferred presidential form of democracy. However, for the greater good of the country the system must move from multi-party to a three party democracy. If not, regional and smaller parties will fragment people power and our democratic system will lack the muscle required to bring about sustained developmental growth. No claim of any epistemological breakthrough is made in the paper except that the author has taken well-accepted views of Arrow, Pareto, Sen and others to analyse the present form of democracy in India.

Keywords: Indian Democracy, Arrow, Sen, Impossibility, Pareto Optimality, Monotonicity

1. Introduction

This paper will try and put across a case for a three party democracy in India. In doing so, it will demonstrate the validity of Arrow's paradigm and the impossibility of Pareto's optimality in the present Indian democratic context. It is not an exercise in Nihilism but an attempt to show the futility of a multi-party democracy thereby giving other scholars a pedestal to put forward a case for a two or three party election system: politically or ideologically with one to the left, one to the right and one party in the centre. Religion, caste and regionalism, it is argued, must be a strict no-no in a secular democracy, this paper further argues.

The position taken in this paper springs from the fact that Abraham Lincoln's universally accepted definition of democracy cannot explain realities in the developing world adequately. Seen as being *the government of the people, by the people and for the people,* the definition precisely fails to address the question of "which people"? After the American war of independence Lincoln was right at Gettysburg to say what he did. But to maintain the same from New Delhi in 2008 would be a gross error. How and why can the rural and the urban populace be expected to think alike? Are the people who vote *less in number* than those who can and do not vote? Are the people in power not usually different from those who vote for them? What say does the *common man* (who votes) have in how the country is *managed* by those uncommon men in power (who rule)?

At this juncture, we would do well to bear in mind the position of the several politicians who in facing many an ideologically charged election have defied all political forecasts and emerged with a majority in Parliament. They are worshipped by one section of the populace and reviled by another but yet there is little room for doubt that the state they represented has experienced developmental growth in real economic terms, the quality of life of the electorate has improved an land reforms have been a thumping success (as the case may be). Six basic premises are adopted for the argument and they are stated up front:

- Parliamentary democracy cannot function effectively on an empty stomach and an empty mind. In short, with mass poverty and mass illiteracy, democracy is difficult to practice and India has both of these in abundance.

- India cannot call itself secular as long as we have unified criminal code but a stratified civil code. It is almost the new *avatar* of the colonial divide and rule policy which seems to have been accepted in the name of political correctness.
- India cannot have about 40% of the electorate casting its vote and still claim a majority has elected that the Government in power in New Delhi (at any time). Hence, by that argument, we have never had a majority elected party especially after the Emergency.
- The chance given by history in the 1970s (after Indira Gandhi was assassinated) through a thumping majority within Parliament was squandered on a number of issues as is well known. Conversely this is also the time when the process of technology driven modernisation began but was unfortunately swamped by an retrograde environment that was ill prepared to accept it.
- India is fast moving from being a state capitalist economy towards becoming a peripheral capitalist economy, albeit both of a retarded variety. Hence, we should honourably drop the tag of following a "socialistic pattern of society" (whatever that meant), from the political rhetoric in 2008.
- We must put an end to all micro-nationalistic and regionalist tendencies that divide the nation rather than unite it. The *sons of the soil* theory is fraught with danger since it alienates people from the same country making room for illegal immigrants along with whom nefarious elements can easily gain entry into India. National security may be jeopardised in the process.

Without meaning to paint the polity with a wide brush, (which would be un-academic, undesirable and unfair), it is argued that there is definitely some room for improvement. The paper further argues that unless a larger number of political leaders learn to call a spade a spade and are prepared to walk their talk, Indian planning will forever be like what Bernard Shaw said about statistics *a blind man, looking for a black cat in a dark room that does not exist*. Clearly, the current political system is ripe for change and accordingly six positions that this paper takes and tries to logically validate.

- India needs a two or three party system with a presidential form of government if the great divide between the urban and rural growth is to be equilibrated (if not bridged). And each political party has to have a national status so that it represents a collective voice of democracy and is not bogged down by regional issues.
- As long as parties with a regional caste and religious bias proliferate, we as people cannot stand united. In addition, the number of political parties will increase and regional combines will emerge preventing leaders from tackling national issues appropriately. Hence, we must suitably address the chimera of micro-nationalism, if not eliminate it, altogether.
- Unless we meet the ongoing anachronism of having too much politics with economics and too little economics with politics, head on and ameliorate the situation, sustainable developmental growth (in real terms) will remain a pie in the sky for the Indian economy.
- The time has now come to bid adieu to *micro nationalism* existing in the form of linguistic division of states and *macro nationalism* manifested in the form of a reservation policy. This requires a political will as well as a clarity of purpose which is sadly found wanting
- Since the Non Aligned Movement that once had an ideological role but strategically, it is now a damp squid and the unipolar world economy is becoming a reality. India should enter into Defence Pacts with the USA, the USSR and the EU so that its huge defence spending is diverted to real developmental needs. After all, the Indian peninsula is surrounded by unfriendly and (some) unstable neighbours having substantial nuclear capability to annihilate parts substantial areas before this country retaliates. At the same time there is no denying the fact that India's development need are genuine and urgent.
- The spread of education needs to be increased, the intelligentsia would do well to stop shunning politics and levels of civic consciousness require to be raised. This means the State ought to increase budget allocation for formal education and technology training while ensuring though good governance that the trickle down effect does take place. Populace at the grass roots level must benefit.

If the above conditions are met then this paper argues, India has a good chance of addressing the twin socio-economic evils: *unequal distribution* of wealth, incomes and opportunities on the one hand and *uneven growth* of sectors, regions and peoples on the other. These are the two important macroeconomic concerns that need to be squarely addressed but which needs political will and which is substantially lacking, as was argued by Sadri and Hegde 1996. Up until 2008 the parliamentary form of democracy and its multi-party system has unfortunately failed to address these two concerns in an acceptable manner. The abject failure of the Public Distribution System (PDS) is a case in point as is the rising number of peasant-farmer suicides in Western India showing clearly that the

growth effects are not trickling down. This paper, using economic welfare theory, as propounded by Kenneth Arrow, Vilfredo Pareto and Amartya Sen, will try and demonstrate *why the present initiatives cannot succeed* and argue that a change must be brought about in the *democratic system itself*. This change is however not solicited for the sake of change but through rational diagnosis (prior) and evaluation (post) intervention. According the Quantum Theory in Physics, the only certainty is the uncertainty principle and one could be sorely tempted to thus explain the dynamic disequilibrium in the markets (including the sharp fall in the BSE and NSE indices) in mid-January of 2008.

From a modernist economic point of view equilibrium is a rare phenomenon which if at all it is achieved it will only be temporary. The world is going through a corporate Olympiad where change is non-linear and non-Newtonian. Systems, structures and functions are concurrently collapsing and so the forces that determine demand and supply are in a state of flux. When welfare conditions are to be considered a degree of stability is not a precondition and market volatility is an integral part of capitalism. Under such conditions Arrow's impossibility theorem assumes greater significance.

1.1 Ground Reality

Looking positively, India as a country has a lot to be proud about. Colonial India was divided and Burma (now Myanmar) was carved out in 1935. Pakistan was carved out in 1947 and divided into East and West and its separation from India was based solely on religious lines. In 1971 East Pakistan broke away from West Pakistan's domination and after a bloody civil war Bangladesh was formed. To the lasting credit of this country even in 2008, it remains the only surviving parliamentary democracy in this geo-physical region; and a very vibrant one at that. Furthermore, in India, there is more religious tolerance and there are more Muslims residing here than in Pakistan or in Bangladesh, which are both Islamic countries.

It has, however, oft been said that India won its freedom in 1947 but six decades later in 2008 it is still fighting for its independence. This independence is not very meaningful in a global environment where cooperation and collaboration are fast replacing competition and compliance. (Ohmae 1994). However, it becomes very relevant when in a country of about 6 lakh villages and a 1.2 billion strong populace about 60% of the population still depend on agriculture in one way or another for its subsistence when 53% of the GDP comes from the services sector (mainly IT). Information Technology and Financial Services are merely *enablers* and it is only logical that they are rendered puerile unless there is something to enable. For this to happen the manufacturing sector must pull up its socks and the agricultural output per capita must increase in real terms. Whereas there are signs of the first happening, the signs of the second were indeed hard to find at least up until 2006. The Tata Group, the Mittal Group and a few others have successfully put India on the world manufacturing map.

Additionally, (as is the case in India) when Direct Foreign Investment (DFI) follows the inflow of Foreign Institutional Investment (FII), instead of the other way around, there is some need for serious introspection. Therefore, it is no wonder that the comprador class is thriving with stock and bond markets operating on speculation rather than on sound economic fundamentals: the real estate sector and the share markets being other cases in point. In addition, India has a federal form of Government but a unitary head of State. The founding fathers who had framed the Indian Constitution were no doubt alive to the cultural asymmetry across the country and had provided for it. The inclusion of a section entitled *Directive Principles of State Policy* is a vibrant witness to this fact. Political expediency has unfortunately placed these in cold storage much to the annoyance of eminent constitutional lawyers like Ram Jethmalani (2008).

As several scholars like Sorabji (2003) and Jethmalani (2008) had argued, Nehru had acted in an un-Gandhian manner by not taking the Kashmir question to arbitration in 1948. The Government in Delhi and then attempted to write off 93,000 square kilometres of land occupied by China in the 1962 (unprovoked) invasion of India. Here it is pertinent to remember that at the crucial moment in history India's strongest ally, the USSR, maintained a stoic silence and it was UK, USA and Israel that sent support to an embattled and outgunned Indian army.

On the economic front, Nehru introduced economic interventionism when India was relatively non-industrialised and the economy was not in a state of recession thus going against the grain of the very Keynesian economic thought that Nehru and Mahalanobis sought to champion. Further damage was done to the political economy under the ill-fated *Emergency Years* when many countervailing tendencies in the polity were systematically emasculated and those who took over the reins of the State thereafter could do no better. Over the years the lofty visions seem to have been consistently derailed and India has had one coalition government after another at the centre. From time to time a call is made for a two party system but it remains a mere will o' the wisp.

A spike in the number of terror incidents has led to an increased demand from VIPs for heightened police protection in certain regions leaving relatively inadequate security for the common people. This is especially sad

when terror camps with Pakistani flags have been spotted in the jungles of Andhra Pradesh and Karnataka according to the *Times of India*, Pune edition 1.2.2008. And yet, Indian parliamentary democracy is still throbbing with political vitality in spite of the fact that there remain several areas where progress is both necessary and possible. The country is still undivided with the constitutionally guaranteed separation of powers are a robust reality. The armed forces have been kept out of politics successfully even when there is a unified criminal code and a stratified civil code, when human rights are invoked in defence of terrorists but not in defence of the victims of terror, the Kashmiri Pundits and when the criminalisation of politics especially in certain states has become rampant. A nadir is truly reached when police chiefs host and fest political leaders who knowingly and wilfully create communal strife in a secular country, as was reported in the *Times of India*, Pune Edition, 07.02.2008.

In spite of these positive aspects what has most unfortunately emerged in 2008 is a mushrooming of regional parties, a growth of fundamentalism and polarisation of views especially after the Pakistan State Sponsored Terrorism has taken its deathly toll of the citizenry over the last two decades. The carnage at Godhra and the siege of Akshardham are cases in point. Jammu and Kashmir that had hitherto borne the brunt of terror and the mass exodus of the Kashmiri Pundits has strengthened Pakistan's influence over the region. Of late, terror has struck in Uttar Pradesh and even deeper into the sovereign Indian territory, giving the term *jihadi* an erroneous meaning altogether. The Communist Party of India (CPI) that had (decades ago) split into CPI and CPM (Communist Party Marxist) and the more liberal variants (have now) latched on to regional combines and coalitions like the Rashtriya Janata Dal (RJD) and the Bhujan Samaj Party (BSP). The radical variants of CPI such as CPI-ML (Marxist-Leninist) and the Maoists operate non-constitutionally and are *not* a part of the accepted Indian democratic system. They are conspicuous by their silence on the question of the 93,000 square kilometres of Indian Territory in Chinese hands and a misguided few would rather point the finger of suspicion towards India! The Congress Party retains the public voice of secularism in spite of "Operation Blue Star" and the Sikh massacre as the aftermath of Indira Gandhi's assassination.

The Parliament's stand in the Shah Bano Case was similarly retrograde and a blatant attempt to placate the vote bank. In this infamous case the Parliament legislated that when *the law of the land was at variance with the law of the Koran the latter will hold sway*. This was the ultimate triumph of political expediency over jurisprudence and vote bank imperatives had come to stay. The Rashtriya Swayamsevak Sangh (RSS) retains its identity like the CPI, but its variants in the form of the former Jan Sangh and now the Bharatiya Janata Party (BJP) as well as its more conservative-radicalised offshoots tells a different story. Unfortunately, acrimony of one sort or another plagues a militant Bajrang Dal, Shiv Sena and the regionalist Maharashtra Nav Nirman Sena. We concede that often this acrimony may not always be of their own making. There are also Ku Klux Clan type organisations on the political fringes like the Ranbir Sena in Bihar that is known to pressurise rural voters as well as grabbing booths at gunpoint during elections and the Sambhaji Brigade in Mahatashtra that is known for its role in vandalising of the Bori Oriental Research Institute some years ago. Under such a scenario, voter choice preferences multiply almost exponentially. Pareto optimality becomes an impossible dream even if it were to be desirable.

The voter is consequently torn between preconceived ideas, caste and religious considerations, socio-economic realities, past political affiliations, money and muscle power, and even ambivalence since the percentage who actually cast their vote is a lot less than the percentage of those who are eligible to vote. It is against this ground reality in the Indian realpolitik that further discussion ensues.

2. Kenneth Arrow's Impossibility Theorem

Fifty seven years ago, (in 1952) the noted mathematical economist and a co-recipient of the 1972 Nobel Prize in Economics, Kenneth Arrow in his Doctoral thesis posited the idea of an impossibility theorem and later popularised it in his 1951 book *Social Choice and Individual Values*. Furthermore, Ng (1988) informs that Arrow (1951) had originally called his theorem the *General Possibility Theorem* since he first had proved another theorem for the special case of two alternatives. However as the answer to the *General Possibility Theorem* was negative it is now referred to as the *Impossibility Theorem*. The original paper of Arrow that was entitled "A Difficulty in the Concept of Social Welfare" had proved that there is NO consistent method of making a fair choice among three or more candidates. This remarkable result assured thinkers that there is no single election procedure that can always fairly decide the outcome of an election that involves more than two candidates or alternatives. In voting systems, Arrow's impossibility theorem, or *Arrow's paradox*, demonstrates that no voting system based on ranked preferences can possibly meet a certain set of reasonable criteria when there are three or more options to choose from. These criteria are called unrestricted domain, non-imposition, non-dictatorship, monotonicity, and independence of irrelevant alternatives, and these are briefly explained below. In simple terms, Arrow argues that *a rule for deriving, from individual ordering of social states, a social ordering consistent with some reasonable conditions cannot be found in general.*

The need to aggregate preferences occurs in many different disciplines: in welfare economics, (Kaldor 1939, Little 1957, Baummol 1965). Therein one attempts to find an economic outcome which would be acceptable and stable; in decision making, where a person has to make a rational choice based on several criteria; and most naturally in voting systems, which are mechanisms for extracting a decision from a multitude of voters' preferences. The framework for Arrow's theorem assumes that democratic societies need to extract a preference order on a given set of options (outcomes). Each individual in the society (or equivalently, each decision criterion) gives a particular order of preferences on the set of outcomes. In doing so, we are searching for a preferential voting system, called a *social welfare function*, which transforms the set of preferences into a single global societal preference order. The theorem considers the following properties, assumed to be reasonable requirements of a fair voting method:

2.1 Free Triple

There are at least three among all the alternatives under consideration for which all logical possible individual orderings of these three alternatives are admissible. This condition avoids trivialising the problem posed by restricting the sets of individual orderings. Furthermore, there is a positive (non-negative) association between alterations in social ordering and individual values that this paper shall soon revert to.

2.2 Non-dictatorship

This condition is neither suitable for Democratic Centralism nor for National Socialism since it is mildly formulated. Moreover, the conditions of Myanmar and Pakistan are clearly ruled out. The social welfare function should account for the wishes of multiple voters. It cannot simply mimic the preferences of a single voter, as some editorial columns in Indian newspapers had suggested. In recent Indian TV debates an individual is often used as a proxy for the party and character assassination wantonly takes place in the name of healthy criticism. There are unfortunately several instances showing the triumph of vote bank politics over secularism and the preference, which is given to religious, and regionalist over rationalism and ideology. This is a phenomenon visible across the country! In the highest dialectic tradition this paper distinguishes between spiritualism and metaphysics (as philosophy) and religion (as socio-cultural ritual). (Hegel 1988). The paper further opines that it is the latter and not the former case that often impedes sustainable developmental growth.

2.3 Unrestricted Domain or Universality

The social ordering moreover must *not be imposed*. The social welfare function should account for all preferences among all voters to yield a unique and complete ranking of societal choices. Thus, the voting mechanism must account for all individual preferences, it must do so in a manner that results in a complete ranking of preferences for society, and it must deterministically provide the same ranking each time voters preferences are presented the same way. The Indian system of democracy does not provide such a mechanism largely because of propensity of rural India that constitutes a bulk of those voting, cast their ballot on considerations that are not always objective. Large scale poverty, low educational spread, and poor national governance most unfortunately makes money and muscle power the basic instruments for vote gathering, in some regions of the country.

2.4 Independence of Irrelevant Alternatives (IIA)

This condition implies that the choice made by civil society from any given environment depends only on the orderings of individuals among alternatives present in that environment. The social welfare function should ideally provide the same ranking of preferences among a subset of options as it would for a complete set of options. Changes in individuals' rankings of irrelevant alternatives (ones outside the subset) should have no impact on the societal ranking of the relevant subset. Unfortunately, in India, issues of caste, creed, family, religion and regionalism very often overshadow issues of ideology, politics and economics. Hence alternative choices cannot have the same ranking in the minds of the voters even if one would like them to have it.

2.5 Monotonicity

In Mathematics, a monotonic function or quantity is one that varies in such a way that it never either increases or decreases. This term in the Economics of Welfare implies a positive association of social and individual values. So, if any individual modifies his or her preference order by promoting a certain option, then the societal preference order should respond only by promoting that same option or not changing, never by placing it lower than before. An individual should not be able to hurt an option by ranking it higher. Monotonicity in the case of India just does

not exist except in the case of the mediocrity that promotes the 'cult of the personality" and the obsequious comprador elements who never tire of saying "yes sir, yes sir, three bags full sir".

Public opinion is often shifted radically in the light of certain events. In the USA fo instance the September 11 attack on the World Trade Centre sparked of an anti-Islamic feeling. In the case of the threat of foreign sponsored terrorism, for instance, the Indian vote bank significantly shifts in favour of nationalism and stability irrespective of the proclaimed ideology of the party.

The poverty as well as (lack of) robustness of ideology is clearly shown when some vested interests tried to deny a visa extension to Taslima Nasrin and later in 2008 when the Central Government itself played the vote bank card yet again when they unsuccessfully requested France to reconsider awarding the Simone de Beauvoir Literary prize to Taslima Nasrin. So important has become the placating of the vote bank that in the case of Salman Rushdie's *Satanic Verses*, citing myopic imperatives, India was the first country that banned the book. This, however, does not give an artist a licence to hurt the sentiments of a people as was the case with the legendary M F Hussain.

It is important to point out that neither the Muslim nor the Hindu community is unitarist. Pluralism can be found amongst the Sikhs, Buddhists, Jains, Parsis, and Christians of India. It would therefore be a socio-historical travesty to claim that all Muslims in India support the Taliban, as right wing media often tries to portray. Maulana Jilani Ashraf, a Muslim theologian, for instance, in 2008 in trashing such a view was thus quoted "Sufi saints live in people's hearts while invaders have been consigned to history. Following terrorist attacks at several places of worship across India, Sufi leaders came together to create a civic organisation to help the government and society in its fight against terror." A close reading of the Quran would demonstrate that (a) the term *jihadi* is being wantonly misused and (b) there is no place for terrorism in Islam.

2.6 Citizen sovereignty

This implies a kind of non-imposition of social ordering in any manner whatsoever, and whereby every possible societal preference order should be achievable by some set of individual preference orders. This means that the social welfare function has an unrestricted target space. Unfortunately, as was witnessed in the case of Nandigram where a strange and almost unlikely alliance emerged between the Maoists, the (self-proclaimed) *jihadi* infiltrators and those who were seeking the help of social activists to guard their turf (land) from being acquired in the name of development. The questionable role of the ruling party cadres and the *faux passé* by those in power enabled political economists to see CPM at the state and the central levels often taking very different stands. In such circumstances too, the importance of Arrow's theorem is at once highlighted.

Arrow's theorem basically says that *if the decision-making body has at least two members and at least three options to decide among, then it is impossible to design a social welfare function that satisfies all these conditions at once.* A 1963 version of Arrow's theorem can possibly be obtained by replacing the monotonicity and non-imposition criteria with *Pareto Optimality* which this paper presently takes up.

According to the criterion of *Pareto efficiency* if every individual prefers a certain option to another, then so also must the resulting societal preference order. This, again, is a demand that the social welfare function will be minimally sensitive to the preference profile. This version of the theorem is stronger—has weaker conditions—since monotonicity, non-imposition, and independence of irrelevant alternatives together imply Pareto efficiency, whereas Pareto efficiency, non-imposition, and independence of irrelevant alternatives together *do not* imply monotonicity. This moot point needs to be borne in mind while discussing realpolitik.

Interpretations of Arrow's Theorem: Arrow's theorem is a mathematical result, but it is often expressed in a non-mathematical way with a statement such as (a) no voting method is fair, (b) every ranked voting method is flawed, or (c) the only voting method that is not flawed is a dictatorship. These statements are simplifications of Arrow's result, which are not universally considered true. What Arrow's theorem does state, however, is that a voting mechanism cannot simultaneously comply with all of the conditions given above.

In this author's opinion, Arrow had probably used the term "fair" to refer to his criteria. Indeed, this author posits, Pareto efficiency, as well as the demand for non-imposition, seems trivial to the rational mind under these circumstances. As for the independence of irrelevant alternatives (IIA), for the sake of argument let it be supposed that there is a cosmopolitan constituency in Mumbai and that all four contenders are originally non-Mumbaikars (non-residents of Mumbai). They are D'Souza, Chatterjee, Bilimoria and Agashe who are running for an important political office, and further let it be supposed that Agashe has a clear advantage since he is a Maharashtrian an regionalists will back him.

Now according to Arrow's theorem, there could well be a situation where if D'Souza steps out of the race, it will

suddenly be Bilimoria, and not Agashe, who would win the race. This would seem "unfair" by many. Yet *it can* happen, and Arrow's theorem states that these "unfair" situations cannot be avoided in general, without relaxing some other criterion. Something has to logically give in. So the important question to be asked, in light of Arrow's theorem is *which condition should be relaxed?*

Various theorists have suggested weakening the IIA criterion as a way out of the paradox. Hansson 1969 demonstrated that if we were to impose *anonymity* or neutrality between persons, and *neutrality* between alternatives, no group decisions could satisfy IIA unless it always declares all alternatives equal. Ng calls this an *alternative impossibility theorem* if we were to stay within the framework of orderings only. Proponents of ranked voting methods contend that the IIA is an unreasonably strong criterion, which actually does not hold in most real-life situations. Indeed, the IIA criterion is the one that is found breached in most useful voting systems. Perhaps this is so. Advocates of this position point out that failure of the standard IIA criterion is trivially implied by the possibility of cyclic preferences. [While Condorcet and Borda are usually credited as the founders of voting theory, recent research has shown that the philosopher Ramon Llull had discovered both the Borda count and a pair-wise method that satisfied the Condorcet criterion in the 13th century. The manuscripts in which he described these methods had been lost to history until they were rediscovered *a la Hägele and Pukelsheim (2001).*

Simply stated, let it be supposed that voters were to cast their ballots as follows:

7 votes for A > B > C

6 votes for B > C > A

5 votes for C > A > B

In such a case the net preference of the group is A > B > C > A. In this circumstance, any system that picks a unique winner, and satisfies the very basic democratic rule that a candidate who receives a majority of all first-choice votes must win the election, will fail the IIAC criterion. Without loss of generality, one may also consider that if a system currently picks A, and B drops out of the race, the remaining votes will be: 7 votes for A > C and 11 votes for C > A

Thus, C will win, even though the change (B dropping out) was concerned an "irrelevant" alternative candidate who did not win in the original circumstance.

So, what Arrow's theorem really shows is that voting is a *non-trivial game*, and that game theory should be used to predict the outcome of most voting mechanisms. This could be seen as a discouraging result, because a game need not have efficient equilibria, e.g., a ballot could result in an alternative which nobody really wanted in the first place, yet everybody had voted for. Indeed, this author would go so far as to argue that this is fine since equilibrium is not a *necessary* but a *convenient* condition in economics.

Equilibrium as a concept has drawn several noteworthy comments and contentions. For instance, Kornai, (1971) in opposition to Walrasian general equilibrium theory, (Samuelson 1947, Schumpeter 1951) developed in this work an alternative framework for a non-Walrasian type of economics, blending elements of organization theory, information theory, management science and the new disequilibrium economics. Blaug (1985) correctly describes Kornai as one of the few economists of the Eastern bloc who is read with interest by Western economists. In this context, one can visualize that Arrow throws up a very interesting view on welfare. Marx (1973) perhaps would have been less charitable and some redemption for Walrasian equilibrium could perhaps even arise from Kalecki's concept of *business cycles* (Sadri and Hegde 1995) and Sraffa's treatment of *dated labour.* (Hegde and Sadri 1998)

Alternative Views: This paper has *so far assumed* that the "correct" way to deal with Arrow's paradox is to eliminate (or weaken) one of the criteria. The IIA criterion is the most natural candidate in this instance. Yet literature shows that there are other "ways out". Duncan Black, (1969) for instance, had shown that if there is only one agenda by which the preferences are judged, then all of Arrow's axioms are met by the majority rule. In any vibrant democracy this is not the case. However, in dictatorships that make a show of democratic elections, this is very much possible as in an unstable and volatile Pakistan especially after the fall of the Taliban in Afghanistan. Technically, this means that if one could properly restrict the domain of the social welfare function, then all could go well. Black's restriction, the *single-peaked preference* principle, states that there is some predetermined linear ordering P of the alternative set. Every voter has some special place he likes best along that line, and his dislike for an alternative grows larger as the alternative goes further away from that spot.

Also, in case, for example, there has been a bomb blast of enormous proportion causing severe damage then the ensuing election verdict will go in favour of that candidate or party seen to be an antithesis to the forces behind the blasts. Then the condition of a single peaked preference may arise. Rajiv Gandhi's assassination leading to a landslide victory for the Congress in the second part of the election is a case in point. Benazir Bhutto's assassination could possibly be another. However, one does not need to be a genius to realise that democratic

fairness cannot be ensured when one party uses the tip of the bayonet to ensure a win or when the opposition is either buried in their graves, are languishing in prison or have been forced into exile as in Myanmar or Tibet!

Indeed, many different social welfare functions can meet Arrow's conditions under such restrictions of the domain. It has been proved, however, that under any such restriction, if there exists any social welfare function that adheres to Arrow's criteria, and then the majority rule will most possibly adhere to Arrow's criteria. Under single-peaked preferences, then, the majority rule is in some respects the most natural voting mechanism. It seems to be good news for those who *thrive on chaos.*

Another common way "around" the paradox is limiting the alternative set to two alternatives. Thus, whenever more than two alternatives should be put to the test, it seems very tempting to use a mechanism that pairs them and votes by pairs. As tempting as this mechanism seems at first glance, it is generally far from meeting even the Pareto principle, not to mention IIA. The specific order by which the pairs are decided strongly influences the outcome. This is not necessarily a bad feature of the mechanism. Many sports use the tournament mechanism, essentially a pairing mechanism, to choose a winner e.g. heats in track and field events and groups in tennis tournaments. This gives considerable opportunity for weaker teams to win, thus adding interest and tension throughout the tournament. An example can be found in many cases elections where the voter are either *for* someone or *against* that someone leaving no scope virtually for candidates who were betwixt and between. Hence, what emerges is a *de facto* "two alternative agenda" for voters.

In a democracy which is based on sound national governance norms and where ideology rather than religion, caste, region, muscle and money matter, voter choices should be limited if the best or Pareto efficient result was to be obtained. Alas, in today's India this is perhaps a utopian idea! This takes us to the questions of determining efficient solutions and optimality leading to an examination of Pareto and it is from there that we go on to Amartya Sen who had raised critical questions on the paradox. (Sinha and Sen, 2000). However, before engaging Sen perhaps a quick examination of Pareto and his economic ideas, would be in order.

3. The Economics of Vilfredo Pareto

Vilfredo Federico Damaso Pareto was a French-Italian sociologist, economist and philosopher who made several important contributions especially in the study of income distribution and in the analysis of individuals' choices and so helped to develop the field of microeconomics. He worked as a lecturer in economics at the University of Lausanne in Switzerland where he remained for the rest of his life. There he made the famous observation in 1906 that twenty percent of the population owned eighty percent of the property in Italy, later generalised by Joseph M. Juran and others into the so-called Pareto principle (also termed the 80-20 rule) and generalised further to the concept of a Pareto distribution. In his (1916) (1935) work, Pareto had eloquently put forward the *first social cycle theory in sociology*. He is accredited for the famous saying *history is a graveyard of aristocracies.*

As social scientists would vouchsafe, a great deal of Talcott Parsons *theory of society* is based on Pareto's works. Parsons had aimed at formulating a sociology canon made of Durkheim, Weber and Pareto. A wide array of social scientists has worked on this general methodological basis. This was the basis also on which Sadri and Jayashree (2000) gave their ethical conception of euthanasia.

The most widely-used concept in theoretical welfare economics is "Pareto optimality" (also known as "Pareto efficiency"). An allocation is Pareto-optimal iff it is impossible to make at least one person better off without making anyone else worse off; a Pareto improvement is a change in an allocation which makes someone better off without making anyone else worse off. As Hal Varian's Microeconomic Analysis explains, "[A] Pareto efficient allocation is one for which each agent is as well off as possible, given the utilities of the other agents." "Better" and "worse" are based purely upon subjective preferences which can be summarized in a "utility function," or ordinal numerical index of preference satisfaction.

While initially it might seem that every situation is necessarily Pareto optimal, this is not the case. True, if the only good is food, and each agent wants as much food as possible, then every distribution is Pareto optimal. But if half of the agents own food and the other half own clothes, the distribution will not necessarily be Pareto optimal, since each agent might prefer either more food and fewer clothes or vice versa.

Normally, economists would expect agents to voluntarily trade in any situation which is not Pareto optimal; but neoclassical theorists have considered a number of situations in which trade would be a difficult route to Pareto optimality. For example, suppose that each agent is so afraid of the other that they avoid each other, even though they could both benefit from interaction. What they need is an independent and powerful organization to e.g. protect both agents from each other so that they can reach a Pareto-optimal allocation. What they need, in short, is the state. While

economists' examples are usually more elaborate, the basic intuition is that government is necessary to satisfy the seemingly uncontroversial principle of Pareto optimality.

Anarchists of all sorts would immediately object that the very existence of deontological anarchists shows that Pareto optimality can never justify state action. If even the slightest increase in the level of state activity incompensably harms the deontological anarchist, then obviously it is never true that state action can make some people better off without making any others worse off. Moreover, virtually all government action makes some people better off and other people worse off, so plainly the pursuit of Pareto improvements has little to do with what real governments do.

Due to these difficulties, in practice economists must base their judgments upon the far more controversial judgments of cost-benefit analysis. (In the works of Richard Posner, this economistic cost-benefit approach to policy decisions is called "wealth-maximization"; a common synonym is "Kaldor-Hicks efficiency.") With cost-benefit analysis, there is no pretense made that government policy enjoys unanimous approval. Thus, it is open to the many objections frequently made to e.g. utilitarianism; moreover, since cost-benefit analysis is based upon agents' willingness to pay, rather than on agents' utility, it runs into even more moral paradoxes than utilitarianism typically does.

In the final analysis, welfare economists' attempt to provide a value-free or at least value-minimal justification of the state fails quite badly. Nevertheless, economic analysis may still inform more substantive moral theories: Pareto optimality, for example, is a necessary but not sufficient condition for a utilitarian justification of the state

Pareto Optimality: Pareto efficiency, or Pareto optimality, is an important concept in economics with broad applications in game theory, engineering and the social sciences. The understanding of the terms optimality or efficiency come from Vilfredo Pareto, who used the concepts in his studies of economic efficiency and income distribution. Given a set of alternative allocations of, say, goods or income for a set of individuals, a movement from one allocation to another that can make at least one individual better off without making any other individual worse off is called a *Pareto improvement*. An allocation is said to be Pareto efficient or Pareto optimal when no further Pareto improvements can be made. This is often called a *strong Pareto optimum* (SPO).

A *weak Pareto optimum* (WPO) satisfies a less stringent requirement, in which a new allocation is only considered to be a Pareto improvement if it is strictly preferred by all individuals (i.e., all must gain with the new allocation). The set of SPO solutions is a subset of the set of WPO solutions, because an SPO satisfies the stronger requirement that there is no allocation that is *strictly* preferred by one individual and *weakly* preferred by the rest (i.e., no individual loses out, and at least one individual gains). Under a parliamentary democracy like India it is perhaps easier to approximate conditions of WPO rather than those of SPO given the fluid nature of objective socio-political reality.

Pareto efficiency in economics: An economic system that is Pareto efficient implies that in civil society *no individual can be made better off without another being made worse off.* Here 'better off' is often interpreted as "being put in a more preferred position". It is commonly accepted that outcomes that are not Pareto efficient are to be avoided, and therefore Pareto efficiency is an important criterion for evaluating economic systems and public policies. If economic allocation in any system, (in the real world or in a model), is not Pareto efficient, there is theoretical potential for a Pareto improvement. This means that an increase in Pareto efficiency through reallocation, improvements to at least one participant's well-being can be made *without* reducing any other participant's well-being. This proposition of Pareto fits the democratic requirements of any election in India quite easily since those who fight elections have a lot more at stake than just their reputation.

Logically speaking, in the real world, however, ensuring that nobody is disadvantaged by a change aimed at improving economic efficiency may require compensation of one or more parties. For instance, if a change in economic policy dictates that a legally protected monopoly (e.g. Indian Railways) ceases to exist and that market subsequently becomes competitive and more efficient, the monopolist (the Indian state) will be made worse off. However, the loss to the monopolist will be *more than offset* by the gain in efficiency. This means the monopolist can be compensated for its loss while still leaving an efficiency gain to be realised by others in the economy. Thus, the requirement of nobody being made worse off for a gain to others is met. Implicitly this assumes that policy makers will prefer the greater good of the greater number, *summum bonum,* over personal consequences. And there is scant evidence to prove in recent times that this is likely to happen.

In the real-world the *compensation principle* that is often appealed to is hypothetical. That is, for the alleged Pareto improvement, say from public regulation of the monopolist or removal of tariffs like Octroi, or other losers from a policy change are not (fully) compensated. The change thus results in distribution effects in addition to any Pareto improvement that might have taken place. The theory of hypothetical compensation is an important part of *Kaldor-Hicks efficiency*, but which this author opines can be bypassed for the paper’s argument. No doubt, the *Kaldor-Hicks efficiency* criterion captures some of the intuitive appeal of *Pareto Efficiency,* but it takes into account the absolute level of income but disregards distribution altogether as Posner (2007) has also argued. It is for this

reason that it is considered not quite relevant to this author's discussion on India. This takes the present discussion a mite further towards the Paretian compensation principle.

Simply stated, the *compensation principle* in welfare economics refers to a decision rule used to select between pairs of alternative feasible social states. One of these states is the hypothetical point of departure ("the original state").Therefore, if the prospective gainers could compensate (any) prospective losers and leave no one worse off, the other state is to be selected (Chipman, 1987). An example of a compensation principle is the Pareto criterion in which a change in states entails that such compensation is not merely feasible but required. The two variants are: (a) the Pareto principle, which requires any change such that *all* gain. (b) The (strong) Pareto criterion, which requires any change such that *at least one* gains and no one loses from the change.

In non-hypothetical contexts such that in which the compensation occurs (e.g. in the marketplace), invoking the compensation principle becomes unnecessary to effect the change. Its use is more controversial and complex wherein full compensation is feasible but not made, and also in the case of selecting among more than two feasible social states. In its specifics, it is also more controversial where the range of the decision rule itself is at issue. In fledging yet robust democracies like India where the comprador elements are often in positions of political power, the compensation principle remains a pipe dream of welfare economics who write on perfect and imperfect competition, social choice theory and social cost benefit analysis.

Under certain idealised conditions, however, it can be shown that a system of free markets will lead to a Pareto efficient outcome. This is called the *first welfare theorem.* It was first demonstrated mathematically by economists Kenneth Arrow and Gerard Debreu in 1954. However, the result does not rigorously establish welfare results for real economies because of the restrictive assumptions necessary for the proof are borrowed from Marshallian neo classical economics. Do we have a condition wherein markets exist for all possible goods, markets are perfectly competitive, transaction costs are negligible, and there must be no externalities?

An alleged key drawback of Pareto optimality is its localisation and partial ordering, especially in a border-less world *a la* Ohmae, 1994. In an economic system with millions of variables there can be very many local optimum points. The Pareto improvement criterion does not define any global optimum. Given a reasonable criterion which compares all points, many Pareto-optimal solutions may be far inferior to the global best solution. Unless there is a two or three party political system and each contender has a national agenda, this paper opines, a global optimum is impossible. And, yet every positive economist will vouchsafe that a global optimum is necessary for sustained developmental growth! (c f Anand and Sen, 1996, 2000)

The graphical figure given above shall elucidate this concept of the Pareto Frontier further. It presents an example of the Pareto frontier, given that lower values are preferred to higher values. Point *C* is not on the Pareto Frontier because it is dominated by both point *A* and point *B*. Points *A* and *B* are non-inferior, (c.f Kreyszig 1972 for a mathematical explanation)

For a given system, the *Pareto frontier* or *Pareto set* is basically defined as the set of parameterizations (allocations) that are all Pareto efficient. Finding Pareto frontiers is particularly useful in engineering and economic modelling. By yielding all of the potentially optimal solutions, a designer can make focused tradeoffs within this constrained set of parameters, rather than needing to consider the full ranges of parameters *a la* Erwin Kreyszig, 1971:

4. Pareto Frontier

Given below is an example of Pareto frontier, given that lower values are preferred to higher values. Point *C* is not on the Pareto Frontier because it is dominated by both point *A* and point *B*. Points *A* and *B* are non-inferior.

Example of a Pareto frontier. The boxed points represent feasible choices, and smaller values are preferred to larger ones. Point *C* is not on the Pareto Frontier because it is dominated by both point *A* and point *B*. Points *A* and *B* are not strictly dominated by any other, and hence do lie on the frontier.

Given a set of choices and a way of valuing them, the Pareto frontier or Pareto set is the set of choices that are Pareto efficient. The Pareto frontier is particularly useful in engineering: by restricting attention to the set of choices that are Pareto-efficient, a designer can make tradeoffs within this set, rather than considering the full range of every parameter.

The Pareto frontier (Figure 1) is defined formally as follows.

Consider a design space with *n* real parameters, and for each design-space point there are *m* different criteria by which to judge that point. Let $f : \mathbb{R}^n \to \mathbb{R}^m$ be the function which assigns, to each design-space point x, a criteria-space point *f*(x). This represents the way of valuing the designs. Now, it may be that some designs are infeasible; so let *X* be a set of feasible designs in $\mathbb{R}^n$, which must be a compact set. Then the set which represents the feasible criterion points is *f*(*X*), the image of the set *X* under the action of *f*. Call this image *Y*.

Now construct the Pareto frontier as a subset of *Y*, the feasible criterion points. It can be assumed that the preferable values of each criterion parameter are the lesser ones, thus minimizing each dimension of the criterion vector. Then compare criterion vectors as follows: One criterion vector x *strictly dominates* (or "is preferred to") a vector y if each parameter of x is no greater than the corresponding parameter of y and at least one parameter is strictly less: that is, $\mathbf{x}_i \leq \mathbf{y}_i$ for each *i* and $\mathbf{x}_i < \mathbf{y}_i$ for some *i*. This is written as $\mathbf{x} \succ \mathbf{y}$ to mean that x strictly dominates y. Then the Pareto frontier is the set of points from *Y* that are not strictly dominated by another point in *Y*.

Formally, this defines a partial order on *Y*, namely the (opposite of the) product order on $\mathbb{R}^m$ (more precisely, the induced order on *Y* as a *subset* of $\mathbb{R}^m$), and the Pareto frontier is the set of *maximal elements* with respect to this order.

Algorithms for computing the Pareto frontier of a finite set of alternatives have been studied in computer science. There, this task is known as the maximum vector problem or as skyline query.

5. Relationship to Marginal Rate of Substitution

An important fact about the Pareto frontier in economics is that at a Pareto efficient allocation, the marginal rate of substitution is the same for all consumers. A formal statement can be derived by considering a system with *m* consumers and *n* goods, and a utility function of each consumer as $z_i = f^i(x^i)$ where

$x^i = (x_1^i, x_2^i, \ldots, x_n^i)$ is the vector of goods, both for all *i*. The supply constraint is written for

$\sum_{i=1}^{m} x_j^i = b_j^0 \quad j = 1, \ldots, n$. To optimize this problem, the Lagrangian is used:

$L(x, \lambda, \Gamma) = f^1(x^1) + \sum_{i=2}^{m} \lambda_i (z_i^0 - f^i(x^i)) + \sum_{j=1}^{n} \Gamma_j (b_j^0 - \sum_{i=1}^{m} x_j^i)$ where λ and Γ are multipliers.

Taking the partial derivative of the Lagrangian with respect to one good, *i*, and then taking the partial derivative of the Lagrangian with respect to another good, *j*, gives the following system of equations:

$\frac{\partial L}{\partial x_j^i} = f_{x^1}^1 - \Gamma_j^0 = 0$ for *j=1,...,n*. for $\frac{\partial L}{\partial x_j^i} = -\lambda_i^0 f_{x^1}^1 - \Gamma_j^0 = 0$ *i = 2,...,m* and *j=1,...,m*, where f_x is the marginal utility on *f' of* x *(the partial derivative of* f *with respect to* x*).*

$\frac{f_{x_j^i}^i}{f_{x_s^i}^i} = \frac{f_{x_j^k}^k}{f_{x_s^k}^k}$ for *i,k=1,...,m* and *j,s=1,...,n...,*.

6. Criticism

Pareto efficiency does not consider the equity of resource allocations. It may be that one economic agent owns all of the world's resources; it would be impossible to make anyone else better off without taking something away from this agent. Thus this situation is described as "Pareto optimal", even though it is inequitable.

More generally, it can be misleading, in that "not Pareto optimal" implies "can be improved" (making someone better off without hurting anyone), but "Pareto optimal" does not imply "cannot be improved" by some measure—it only implies that someone must receive less. Thus if an allocation is not Pareto optimal, it means that one can improve it, but does not mean that one should categorically reject it for a Pareto optimal solution. More importantly, not all Pareto optimal states are equally desirable from the standpoint of society in general. For instance, a one-time transfer of wealth from the very wealthy to the very poor may not be a Pareto improvement but may nevertheless result in a new Pareto optimal state that is more socially desirable than the previous one.

It must be realised that Pareto efficiency *does not require* an equitable distribution of wealth. So we can as well speak of Pareto efficiency in the Indian context. An economy in which the wealthy hold the vast majority of resources can be Pareto efficient. This possibility is inherent in the definition of Pareto efficiency; by requiring that an allocation leave no participant worse off, Pareto efficiency tends to favour outcomes that do not depart radically

from the *status quo.* Amartya Sen has elaborated the mathematical basis for this criticism, pointing out that under relatively plausible starting conditions, systems of social choice will converge to Pareto efficient, but inequitable, distributions.

A simple example of the above is the distribution of a pie among three people. The most equitable distribution would assign one third to each person. However the assignment of, say, a half section to each of two individuals and none to the third is also Pareto optimal despite not being equitable, because none of the recipients is left worse off than before, and there are many other such distributions. An example of a Pareto inefficient distribution of the pie would be allocation of a quarter of the pie to each of the three, with the remainder discarded. The origin of the pie is conceived as immaterial in these examples. In such cases, in which a "windfall" that none of the potential distributees actually produced is to be allocated (e.g., land, inherited wealth, a portion of the broadcast spectrum, or some other resource), the criterion of Pareto efficiency does not determine a unique optimal allocation.

There has developed an entire literature following from Arrow's original work which finds other impossibilities as well as some possibility results. For example, if we weaken the requirement that the social choice rule must create a social preference ordering which satisfies transitivity and instead only require acyclicity, (if a is preferred to b, and b is preferred to c, then it is *not* the case that c is *ipso facto* preferred to a), there do exist social choice rules which satisfy Arrow's requirements.

7. Sen and The Paretian Liberal Paradox

The Nobel Prize winning economist, Amartya Sen has suggested at least two other alternatives. He has offered both relaxation of transitivity and removal of the Pareto principle. He has shown the existence of voting mechanisms which comply with all of Arrow's criteria, but supply only semi-transitive results. Also, he has demonstrated another interesting impossibility result, known as the "impossibility of the Paretian Liberal". Sen went on to argue that this demonstrates the futility of demanding Pareto optimality in relation to voting mechanisms. In 1970 Sen had advanced, in the tradition of Voltaire, the definition of a liberal as *that which represents a value involving individual liberty,* (c.f. Mill 1967) which many (including this author) would prescribe to. He went on to demonstrate that the liberal so defined would conflict with the principle of Pareto optimality.

Several scholars like Hillinger and Lapham (1971) disagree with Sen. Others like Aldrich (1977) refer to it as Sen's dilemma. The liberal paradox remains a powerful and logical paradox advanced by Sen. Building on the work of Arrow and his general possibility theorem, which showed that within a system of menu-independent social choice, it is impossible to have both a commitment to "Minimal Liberty", which was defined as the ability to order tuples of choices, and Pareto optimality. Since this theorem was advanced in 1970, it has attracted a wide body of commentary from philosophers such as Buchanan (1978). Nozick (1974) in *Anarchy, State, and Utopia*, argues among other things, that a distribution of goods is just, so long as the distribution was brought about by free exchanges by consenting adults and was made from a just starting position, even if large inequalities emerge from the process.

Nozick appealed to the) idea that people should be treated as ends (what he termed 'separateness of persons'), not merely as a means. (See Kant 1936, 1980) For example, forced redistribution of income treated people as if they were merely sources of money. Nozick here challenged John Rawls's arguments in *A Theory of Justice* that conclude that just inequalities in distribution must benefit the least well off. Nozick had however, backed away from some of the views he expressed in *Anarchy, State, and Utopia* in one of his later books, *The Examined Life*, (1981) calling those views "seriously inadequate."

The most contentious aspect is, on one hand, to contradict the libertarian notion that the market mechanism is sufficient to produce a Pareto-optimal society, and on the other hand it argues that degrees of choice and freedom, rather than welfare economics should be the defining trait of that market mechanism. As a result, it attracts commentary from both the left and the right of the political spectrum. This commentary ought to be, in this author's opinion, honestly seen in Sen's patently liberal ethic.

(Democratic) Freedom at its liberal best is a crucial aspect in Amartya Sen's *weltanschauung*. We can see that Sen had always argued that expansion of freedom is both the *primary end and the principal means of development.* Sen's approach therefore re-established the word 'freedom' as referring to the enhancement 'human capabilities' which involve processes of decision making, as well as opportunities to achieve valued outcomes, i.e. the substantive freedom of people to lead the lives they have reason to value and to enhance the real choices they have. For instance, in *Development as Freedom,* (1999) Sen, argued that expansion of human freedom should both be viewed as the *primary end* and the *principle means* of development. His normative theory of development to a large extent justified a particular focus on inequality and poverty. His perspective on democratic reasoning as the constructive vehicle for valuation based exercises, and in particular how well this perspective fit into the human

development framework of UNDP is uncommonly brilliant. The relevance of markets within the freedom approach, and some of the most important empirical interconnections between different freedoms studied by him clearly show him as not only a profound scholar but also a humanist to the core. Understanding this point about Sen will make the argument in this paper a little more meaningful.

8. Sen's Theorem

The formal statement of the theorem on the basis of which this discussion is mooted is as follows.

Suppose there is a set of social outcomes *X* with at least two alternatives and there is a group of at least two individuals each with preferences over *X*.

A benign social planner has to choose a single outcome from the set using the information about the individuals' preferences. The planner uses a social choice function. For every possible set of preferences, a social choice function selects a choice.

There are two desirable properties we might ask of the social choice function:

- A social choice function respects the "Paretian principle" (also called Pareto optimality) if it never selects an outcome when there is an alternative that everybody strictly prefers. So if there are two choices, (*x*,*y*) such that for all individuals, then the social choice function does not select *x*.
- A social choice function respects "Minimal liberalism" if there are two individuals whose preferences can veto some social outcomes.

That is, there is one individual called *i* and one pair of alternatives *a*,*b* such that if *i* strictly prefers *a* to *b* then the social choice function cannot chose *b* and vice-versa.

Similarly there must be another individual called *j* whose preferences can veto a choice over a (possibly different) pair of alternatives *c*,*d*. If then the social choice function cannot select *d*.

Sen's version of the *impossibility theorem* establishes that it's impossible for the social planner to satisfy condition 1 and condition 2. In other words, for every social choice function there is at least one set of preferences that force the planner to violate condition (1) or condition (2).

But this is Pareto inefficient given that Arti and Dilip each think *both to go > neither to go*.

		DILIP		
		Goes		Doesn't
ARTI	Goes	4,3	→	2,4
		↑		↓
	Doesn't	1,1	→	3,2

The diagram shows the strategy graphically. The numbers represent ranks in Arti and Dilip's personal preferences, relevant for Pareto efficiency (thus, either 4,3 or 2,4 is better than 1,1 and 4,3 is better than 3,2 – making 4,3 and 2,4 the two solutions). The arrows represent transitions suggested by the individual preferences over which each has liberty,

Voting Choice and Game Theory: Voting choice is an integral part of democratic processes as well as Welfare Economics. Following Nash (1950) let us suppose that a girl (Arti) marries a man (Dilip) and both are graduates of XLRI are now living in Bihar. However Arti comes with a liberal family upbringing while Dilip comes from a tradition bound family. Arti's family are supporters of the Rashtriya Janta Dal (RJD) while Dilip's family are supporters of the Congress. There is a big political rally organised in Gandhi Maidan in Patna and an RJD big wig is scheduled to address it.

Suppose Arti and Dilip have to decide whether to go to the rally to hear the big wig speaking and that each has the liberty to decide whether to go by themselves. If the personal preferences are based on Arti first wanting to be with Dilip, then thinking it is a good rally, and on Dilip first wanting Arti to see it but then not wanting to go himself, then the personal preference orders might be thus:

- Arti wants: both to go > neither to go > Arti to go > Dilip to go

or

- Dilip wants: Arti to go > both to go > neither to go > Dilip to go

Then two Pareto efficient solutions would emerge: either Arti goes alone or they both go. Clearly Dilip will not go on his own: he would not set off alone, but if he did then Arti would follow, and Arti's personal liberty means the joint preference must have both to go > Dilip to go. However, since Arti also has personal liberty if Dilip does not go, the joint preference must have neither to go > Arti to go. But Dilip has personal liberty too, so the joint preference must have Arti to go > both to go and neither to go > Dilip to go. Combining these gives us a condition of joint preference.

8.1 Joint Preference

This can be elucidated as neither to go > Arti to go > both to go > Dilip to go, and in particular neither to go > both to go. So the result of these individual preferences and personal liberty is that neither goes to see the film. But this is *Pareto inefficient* given that Arti and Dilip each think both to go > neither to go. In short, whenever socio-cultural externalities impinge upon the rational decision making process the voter tends to operate at a Pareto inefficient level. And in a civil society plagued by religiosity (not to be confused with spiritualism or metaphysics) as well as a polity where governments are formed by coalition of parties and parliament is “hung” the condition is bound to be Pareto inefficient.

8.2 Liberalism and Externalities

The example of India, cited above, shows that liberalism and Pareto-efficiency conflict and is difficult to be attained at the same time. Hence, if liberalism exists in just a rather constrained way, as Sen suggests, externalities could arise. However, this is not always the case. For instance if one individual (a Hindu girl) makes use of her liberal right to decide between two alternatives (a Muslim and a Hindu paramour), chooses one of them and if the civil society would also prefer this alternative, no problem arises.

Nevertheless, the general case will be that there are some externalities. For instance, one individual is free to go to work wearing either decent or in formal clothes. If the individual wears just decent clothes to work, whereas society wants him to go to work n formal attire, there will be an externality. However, no one can force the other to wear just decent clothes or a lecturer in a B-School not to wear sandals to class when there is a formal Western dress code for students. So, one implication of Sen's paradox is that these externalities will exist wherever liberalism exists. Nevertheless, there are some ways out of this dilemma. Their successful application makes sure that both liberalism and Pareto-efficiency can be attained. (Sen and Dreze 1999)

Ways out of the paradox: there are at least three ways out of the paradox, as we shall examine.

First, the way Sen preferred, the individuals may decide simply to "respect" each other's choice by constraining their own choice. Assume that individual A orders three alternatives (x, y, z) according to x P y P z and individual B orders the same alternative according to z P x P y: according to the above reasoning, it will be impossible to achieve a Pareto-efficient outcome. But, if A refuses to decide over z and B refuses to decide over x, then for A follows x P y (x is chosen), and for B z P y (z is chosen). Hence A chooses x and respects that B chooses z; B chooses z and respects that A chooses x. So, the Pareto-efficient solution can be reached, if A and B constrain themselves and accept the freedom of the other player. This scenario can unfold if society is divided in a bipolar fashion with respect to their choice of candidates in a democratic election. More particularly in smaller societies like a housing cooperative the likelihood of this happening is more.

For the second way out of the paradox Sen drew his argument from game theory by assuming that individuals A and B pursue self-interested actions, when they decide over alternatives or pairs of alternatives. Hence, the collective outcome will be Pareto-inferior as the prisoner's dilemma predicts. The way out (except tit-for-tat) will be to sign a contract, so trading away one's right to act selfishly and get the other's right to act selfishly in return. Suppose in an era of political coalitions there emerge two dominant coalitions from which the electorate has to choose one. Suppose further that civil society is divided in a bipolar manner such that persons from one camp would have to compulsorily vote for one coalition candidate and so forth. Under such conditions the collective outcome is likely to be Pareto-inferior. And, this is more likely to happen under *democratic centralism than under a parliamentary democracy.*

A third possibility starts with assuming that again A and B have different preferences towards four states of the

world, w, x, y, and z. A's preferences are given by w P x P y P z; B's preferences are given by y P z P w P x. Now, liberalism, (in this context), implies that each individual is a dictator in a least one social area. Hence, both A and B should be allowed to decide at least over one pair of alternatives. For A, the "best" pair will be (w, z), because w is most preferred and z is least preferred. Hence A can decide that w is chosen and at the same time make sure that z is not chosen. For B, the same applies and implies, that B would most preferably decide between y and x. Furthermore assuming that A is not free to decide (w, z), but has to choose between y and x, then A will choose x. Conversely, if B is just allowed to choose between w and z the choice will eventually will rest with z. The collective outcome will be (x, z), which is *Pareto-inferior*. Hence again A and B can make each other better off by employing a contract and trading away their right to decide over (x, y) and (w, z). The contract makes sure that A decides between w and z and chooses w. B decides between (x, y) and chooses y. The collective outcome will be (w, y), the Pareto-optimal result.

Taken all together the three ways do not resolve the paradox as such. But, they answer the question: What can society do, if the paradox applies and no corresponding social decision function can negate it?

Alternatives (IIA): The reason that the IIA property might not be realistically satisfied in human decision-making of any complexity is twofold:

- The scalar preference ranking is derived from the weighting (not usually explicit) of a vector of attributes.
- A new option can "focus the attention" on a different attribute or set of attributes, changing the tacit weighting and thus the resultant scalar ranking for the previous options.

MacNeal using the logic of the second reason had discussed the instability of a scalar ranking of "most liveable city" with regard to different weighting of a vector of criteria in the chapter "Surveys" of his 1994 book. The term *Mathsemantics* as used by him first appeared in 1994 to reflect the combination of *math and semantics*, the studies of number and meaning, as used here in its broadest sense.

Working from a premise of “bounded rationality” Herbert Simon (1972) had earlier noted that studies which appeared to show that political campaigns were relatively ineffective in indoctrinating voters with new ideas may have been missing the point. Rational behaviour, in economics, generally means that an individual maximizes his utility function under the constraints faced (e.g., their budget constraint, limited choices, social obligations, cultural values etc.) in pursuit of their self-interest. As the some recent political campaigns have shown, rhetoric can be quite effective in focusing voter's attention on a certain set of issues of which they already have some awareness, and hence convincing the voter that these are the issues on which the election should be decided. Therefore, it is only logical that an astute leader would take the developmental growth path to spread his/her message of success. This is in agreement with Bendor (2003) who contended that though Herbert Simon's work, is often cited by political scientists, it has not generated a large research program in that discipline. The main challenge to the rational choice research program can perhaps be developed by building on Simon's ideas on bounded rationality. Bendor defends this assertion by examining how the work of both the early Simon (primarily *satisficing-and-search* models) and the later Simon (on problem solving) can shed light on important topics in our discipline such as budgeting, turnout, and party competition. In the Indian context, this author opines, Sen’s paradox is best understood when seen in terms of Herbert Simon’s bounded rationality.

Logically speaking, Sen's paradox is the following: Suppose there are at least two persons and at least three alternatives. Take a voting system (a rule that associates a ordering of the alternatives to all profiles of individual orderings) satisfying the following conditions: (i) *Unrestricted Domain* (UD): Each individual can rank the alternatives in any transitive manner she likes. (ii) *Pareto* (P): If all individuals rank alternative A above B, the voting system does the same. (iii) *Minimal Liberalism* (ML): There are two different individuals and each of them has a pair off alternatives over which she is decisive, that is the voting system ranks them like that individual. It is logical then that the voting system allows cycles a1<a2<...<an<a1, at some profiles.

ML means that individuals can decide on some issues without any inference by anyone else. So how does the paradox come to be? Saari, (1998) for instance, gives the following explanation: If we would allow people to have cyclic preferences, having a cycle as the social outcome would be natural. Now ML makes us ignore a part of the preferences of almost everyone. This information would be necessary to differentiate between cyclic and transitive preferences. So every procedure that satisfies ML must respect the wishes of both rational and dumb people- and can't tell the difference. An exposition is given in his book *Decisions and Elections.* The anti-incumbency factor that is often spoken about is a good example of how this cyclical fluctuation takes place. This cycle is nothing else

but a reflection of what in India is referred to as the *anti-incumbency factor,* when the electorate shuns a sitting candidate for non-fulfilment of election promises.

9. Democratic Systems

When we review arguments and empirical evidence in the comparative literature that bear on the differences in the survival rates of parliamentary and presidential democracies, we discover that most of these arguments focus on the fact that presidential democracies are based on the separation of executive and legislative powers, whereas parliamentary democracies are based on the fusion of these powers. The implications of this basic distinction lead to radically different behavior and outcomes under each regime. This paper argues that this perspective is misguided and that one cannot deduce the functioning of the political system from the way governments are formed. Other provisions, constitutional and otherwise, also affect the way parliamentary and presidential democracies operate, and these provisions may counteract some of the tendencies that we would expect to observe if we derived the regime's performance from its basic constitutional principle.

A parliamentary system, also known as parliamentarianism is distinguished by the executive branch of government being dependent on the direct or indirect support of the parliament, often expressed through a vote of confidence. Hence, there is no clear-cut separation of powers between the executive and legislative branches, leading to a differing set of checks and balances compared to those found in a presidential republic. Parliamentary systems usually have a clear differentiation between the *head of government* and the *head of state*, with the head of government being the prime minister or premier, and the head of state often being an elected (either popularly or through parliament) president or hereditary monarch. Though in Parliamentary systems the prime minister and cabinet will exercise executive power on a day-to-day basis, actual authority will usually be bestowed in the head of state, giving them many codified or un-codified reserve powers, providing some balance to these systems.

One main criticism of many parliamentary systems is that the head of state is in almost all cases not directly elected. In a presidential system, the president is usually chosen directly by the electorate, or by a set of electors directly chosen by the people, separate from the legislature. However, in a parliamentary system the prime minister is elected by the legislature, often under the strong influence of the party leadership. Thus, a party's candidate for the head of government is usually known before the election, possibly making the election as much about the person as the party behind him or her.

Another major criticism of the parliamentary system lies precisely in its purported advantage: that there is no truly independent body to oppose and veto legislation passed by the parliament, and therefore no substantial check on legislative power. Conversely, because of the lack of inherent separation of powers, this author believes that a parliamentary system can place too much power in the executive entity, leading to the feeling that the legislature or judiciary has little scope to administer checks or balances on the executive.

A presidential system, also called a congressional system, is a system of government where an executive branch exists and *presides* (hence the term) separately from the legislature, to which it is not accountable and which cannot in normal circumstances dismiss it. The defining characteristic of a republican presidential system is how the executive is elected, but nearly all presidential systems share the following features:

- The president bills. In systems such as that of the United States, the president has the power to veto acts of the legislature and, in turn, a supermajority of legislators may act to override the veto. This practice is derived from the British tradition of royal assent in which an act of parliament cannot come into effect without the assent of the monarch.
- The president has a fixed term of office. Elections are held at scheduled times, and cannot be triggered by a vote of confidence or other such parliamentary procedures. However, many presidential systems incorporate provisions for the president's trial and subsequent removal from office by the legislature if he or she is found to have committed a crime.
- The executive branch is uni-personal. Members of the cabinet serve at the pleasure of the president and must carry out the policies of the executive and legislative branches. However, presidential systems frequently require legislative approval of presidential nominations to the cabinet as well as various governmental posts such as judges. A president generally has power to direct members of the cabinet, military or any officer or employee of the executive branch, but generally has no power to dismiss or give orders to judges.
- The concept of a presidential system is distinct. We should not confuse it with the title of President or the Republican form of government. For example, a dictator not popularly or legitimately elected is frequently styled "president". Likewise, many other parliamentary democracies are formally styled republics and

have presidents, a position that is largely ceremonial; notable examples include Israel, the Czech Republic, Germany and Ireland.

Clearly, there are arguments for and against both forms of democracy but as Pylee argues, the Constitutional Drafting Committee (1950) had tried to assimilate both. However, as this author has maintained in his other works, India has successfully registered development-less-growth and the much touted trickle down effects since the economic reforms of 1991 have not fructified.

10. Conclusion

This paper argues that the present system of parliamentary democracy in India cannot either provide a rational voter choice or deliver optimal growth results. Hence, a case for change in the political system is called for. To support this argument the author has adopted the Welfare route and taken the help of three great scholars: Kenneth Arrow, Vilfredo Pareto and Amartya Sen.

Compared with other democracies, it this paper further holds that the United States has a much-decentralized structure of government. That is *not to* suggest that their system is flawless or that it cannot be circumvented to suit a personal agenda, as has been witnessed in recent years. The *founding fathers* of the U.S. Constitution were perhaps wary of the potential dangers of concentrating power in any single political institution, and so deliberately undertook to divide authority among different branches and levels of government. The American model of democratic government, pluralist democracy, has a number of advantages over the majoritarian model. Pluralist democracy requires government power to be dispersed and authority to be decentralized. According to this model, democracy exists when government authority is divided among multiple centers of power that are open to interests of various groups—for example, labor v. management, farmers v. food stores, coal companies v. environmentalists. Groups like these compete against each other in a pluralistic society. The dispersion of authority in pluralist theory prevents government from taking hasty, possibly imprudent action, but it also can prevent any action if important power centers disagree. Although decentralization of power characterizes American government, some institutional features tend to centralize power, enabling government to act even while lacking universal agreement on policy. A two-party system is a form of party system where two major political parties dominate voting in nearly all elections. As a result, all, or nearly all, elected offices end up being held by candidates endorsed by one of the two major parties. Coalition governments occur only rarely in two-party systems, though each party may internally look like a coalition.

Under a two-party system, one of the two parties typically holds a majority in the legislature (or a legislative house in a bicameral system), and is referred to as the majority party. The other party is referred to as the minority party. Notable examples of countries with "two party systems" include the United States and Jamaica. Some countries that feature weak third or fourth parties, such as the United Kingdom and Australia are often thought of being two party states as well, as actual governance of the country may be dominated by only two parties, with other parties having bases of support that are much smaller or stagnant (or both). In India, with too many political parties in the fray any universal agreement is often watered down into a common minimum program. Coalition governments are highly unstable and regional leaders are often both myopic and Quixotic. Horse trading on the floor of the Parliament becomes passé'. The voter is also confused, as every leader seems to promise almost the same things come election time. If the margin of choice were to be narrowed, this author argues, a more eligible candidate has a chance of being elected to political office.

If Arrow's impossibility theorem is valid and this author believes that it is. If a Pareto optimal solution is difficult to obtain, as this author believes that it is, especially since the market mechanism, which is dynamically disequilibrated, hardly provides the conditions for it. Then the logical choice would be to go along with Sen's democratic freedom. In a country like India where dissipation of agendas is as varied as the number of political parties in the fray, the number of choices needs to be limited. This is especially so when we are acting within the bounds of a *collective bounded rationality.* The logical option then is to have a three party system, *one to the ideological left, the other to the ideological right and one betwixt and between.*

It is common knowledge that over the past two decades the three big parties (Congress, BJP and CPI) have been unable to form and sustain an elected government without a coalition with others. [The CPM in West Bengal too had to take the support of the Forward Bloc]. *Micro nationalism* in the guise of regional political parties and linguistic alliances on the one hand and *macro nationalism*, in the form of reservation policies, religious quotas and subsidies as well as appeasement of minorities, and on the other is eating away on the fabric of democracy. Unless we address these issues squarely we may not have anything by way of a robust political system that is left to pass on to posterity. The answer, in this author's opinion, lies in assimilating combining and collating fragmented groups into national level parties on ideological lines. If cooperation and strategic alliances have taken root in the market

place why should it not do the same in the political arena? What prevents a group of parties shunning their individuality and coming under a common banner? This is not to be mistaken with a *common minimum program* which is satisfied with the lowest common denominator in activity and parties stooping (low) to please the coalition partners *sans* ideological justification, save keeping others out and themselves in positions of power!.

Recent events have borne out the argument posited herein and strengthened he author's belief in the proposed political restructuring. The verdict of the last elections is out and mandate is clear. It irrevocably points to three things:

- Regional parties do have clout but they need to move out of their provincial focus and think in national terms. If not they will remain on the fringes of the national polity.
- The centrists have won and yet are seeking alliances with regional parties in areas there they did not fare well. This would be ill-advised as the *common minimum program* as well as dictated by vote bank politics would stifle progress.
- The "third front" a term used for a cluster of pro-secular parties, is history and the Left has had to eat the humble pie mostly due to its own miscalculation and obscurantism. Nevertheless neither the regional parties nor the Left can be written off. Perhaps the regional parties should merge rather than align with any of the big three and have a national agenda for greater stability of this country. The various Communist Parties should combine and put forth a cogent national alternative giving the voter to make an enlightened choice.

This proposed three party system, it is further opined, is a viable logical alternative. It must be based on the *Directive Principles of State Policy* while holding the *Fundamental Rights* guaranteed by the Constitution as being sacrosanct and inalienable, so that politicians do not convert liberty into license or hijack democracy for personal gain. In addition, the paper argues that there must be good governance at the national and state levels where accountability and empowerment go hand in hand. If not, the candidate with money power, the candidate with muscle power, and the candidate with intellect power will behave like the proverbial two wolves and a sheep discussing what is to be had for dinner. It is here that this author rests his case.

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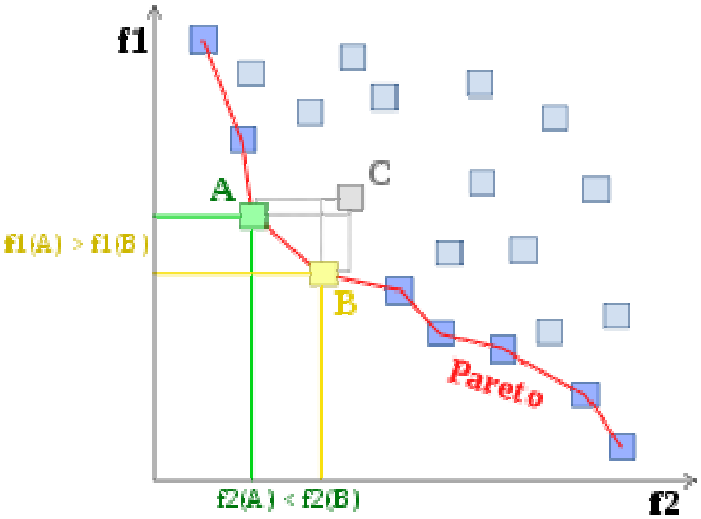

Figure 1. Pareto Frontier