

Improvement of Transport System in Big cities by Sudhir Badami

Family in Mumbai comprising of middle aged parents (42 years mother, **Smruti/Ayee**, 45 years old father **Venkatesh/Venky/Appa**, their teenaged (13 years) daughter **Ananya/Choti**, a 18 year old son **Aditya/Adu**. 70 year old maternal grandfather of children **Subhash/Annu/Ajja**, 65 year old grandmother **Shailaja/Amma/Ajji** are visiting them from Bengaluru. Subhash's brother, 60 year old **Sudhir/Kaka/Ajjakaka** joins them for dinner. Sudhir, a Mumbaiite but presently is stationed in Delhi. They are sitting in the drawing room listening to the Nine O'clock news of Akashvani or AIR on the Radio, a post dinner family tradition from years gone by. TV is normally on for few specific programmes only.

This is All India Radio giving you the News

This morning at peak traffic period a young man identified as Ramashray in his late twenties was hit by a fast moving motor car little south of Andheri flyover on the Western Express Highway in Mumbai. This crash occurred when this man tried to cross the road on the north bound traffic and a speeding car hit him. He was rushed to the Trauma Centre of the Municipal Corporation located at Jogeshwari. He is in the ICU with much bleeding and multiple fractures.

Loud screeching sound of car which has applied brakes, ending with a distinct sound "thud" hitting a person, and then another of the person falling on the road with a softer thud after having tossed up. Following this another screeching sound, ending with a crash of another car on to the first car.

Subhash: I cannot understand why people have to drive so rashly and fast that they cannot even stop in time to prevent a crash. Poor fellow might not survive the multiple injuries he has sustained. The car must be one of those lovely looking sleek motorcars, whose advertisements describe them as one with the super acceleration and high cruising speeds. God knows if he was married and had any children! I wonder how his parents would be on hearing of the accident. It is always painful either way.

Aditya: Ajja, why do you blame his rash driving and the high speed? Perhaps this Ramashray was wrong to start with. Car drivers are not always wrong.

Sudhir: You are right Adu. You might be surprised that I foresaw this accident happening. I was driving on the Western Express Highway on the extreme right side lane of the south bound traffic that was moving at snail's pace. There was this chap, quite likely Ramashray, standing on the mud filled planter median with his mobile in one hand intermittently looking at it and the oncoming traffic. I wondered how he will manage to cross to the west side of the highway with cars coming down the Santacruz flyover at high speed one after the other in different lanes. It was easy to understand how he might have managed to cross the five or six lanes of south bound traffic. Average speed of south bound traffic must be about four kilometers per hour at that spot, giving enough time and space for him to cross that half of the road, lane by lane, quite safely. Now I felt that he was like Abhimanyu stuck in the chakravyooha, retreating to east side would be unthinkable and crossing over to west side would be suicidal.

Now Adu and Subhashdada, tell me, this crash that happened; did it happen because of high speed and rash driving or because of suicidal action of Ramashray while crossing? Was there some other reason too that we have not looked at?

Subhash: Now that you mention the manner Ramashray placed himself in at that location, he could have been wiser to walk back to the eastern side, walked to the nearest crossing and crossed the road safely. All said and done, on a highway speeds will be high and at that location I think the road is five lane wide.

Aditya: But Ajja, he would have had to walk so much just to go across. It is so unfair to people who walk.

Venkatesh: Life is unfair Adu. Sooner you realise this, you will workout your life such that you are never at the

receiving end of this unjust society.

Sudhir: Venky, working out one's own life is one thing. However is it not necessary to also look at unfairness that exists in the society. Making efforts to correct it is as important?

Let us look at Ramashray. Why was he crossing where he did? Why do we see so many people crossing roads at wrong places? Are these the wrong places? Why do we walk on the road? Are roads meant only for the motorized vehicles? What is a road? There are many questions to be raised and answers sought of.

If I my destination is just 40 meters across a road, would I walk even 100 meters to a road crossing, cross the 40 meter road safely and walk another 100 meters, making it 240 meter walk in all? Are these supposedly safe crossings really safe and convenient? Besides the time element being about six times longer, the effort needed is also six time more and likelihood of much greater if one has to climb eight to ten meters of foot over bridge, I might prefer taking risk of crossing the road right there. It is said that one meter climb of stairs is equivalent to ten meters of walk on level. The tradeoff is walk 40 m with risk or walk and climb 400 m to reach the same spot. It is very natural to avoid ten times extra effort and time. Also, at supposedly safe crossings, motorcars block my path or are jumping the red putting my life considerable danger.

Are we surprised to see motorists driving in opposite directions or taking a U-turn at a spot where it is neither safe nor allowed? This is human nature, to conserve energy and time. The only problem with this is that the pedestrian puts his life and limb at danger while generally motorist risks a fine or damage to his vehicle which is compensated by insurance. Even when it endangers oncoming vehicles or pedestrians the person violating basic principle of safety rarely considers this as a violation.

We are a democracy with a Constitution that tells us that there shall be equality for all, taking into account the existing inequality in the society in different fields. No one shall be privileged group, being favoured over other groups. Taken as a whole, the Constitution directs that efforts shall be made towards lessening the inequality. Time and convenience of the common person is equally valuable as those of affluent. Convenience provided for one should not be an impediment or cause of inconvenience or danger to the other.

Smruti: Leave aside the highway or this particular accident. First of all, even on narrow bye-lanes some drivers drive at very high speed endangering our life and limb.

The six lane main roads which I need to cross several times during my walk for shopping or on work – there is this planter median provided so that we pedestrians do not cross anywhere and everywhere. This provides convenience to motorists for smooth drive between two signals. At signals, the time allotted to us pedestrians is barely enough to cross only half the road. After doing that we have to wait three to five minutes before getting a turn to cross the remaining half. With planter median we get a little bit of refuge area but where we have railing-fence we are left at the mercy of the motorist trying to beat the red.

To me my time is precious because I am providing certain facility to my family and also need to reach work place in time. I am also a working woman. Why should I be forced to wait just to cross roads at several places on the way out and back. Why must I be forced to take a motor vehicle just to cover a walkable distance or climb a foot over bridge? Why can't I have a seamless near level walking space? After all infrastructure is being designed for seamless travel to motorists. In its absence I do take the chances to cross half the road width using my judgement; So I, like many, have to run across a pedestrian crossing while at the same time the cars at the signals begin to move forward not only blocking my way but rush ahead even before the signal for it has turned green. I am constantly putting my life and limb to danger. I as pedestrian am being treated unjustly.

Shailaja: Yes, you are right Smruti. When Annu and I go to the park for a stroll and fresh air, we spend much of our time in negotiating the uneven footpaths if any, cross the roads after waiting for unnecessary period with heart in our hands, not to speak of unbearable traffic noise. After all we are not as quick in crossing as we used to be. We barely manage twenty minutes of quality time

together in the park and much less just the two of us.

Ananaya: But Ajji there is something good in all this. Ajja and you could hold hands and walk to the garden! How very romantic, isn't it?

Smruti: Ananyaaa! Not very funny!

Ananya: Heheheee!

Aditya: Ajja-Kaka, I remember reading somewhere that in Mumbai, public transport carries most passengers and all those who use public transport do walk to the bus stop or the railway station while going and also while returning. Some do take autorickshaws or taxis. That would mean practically everyone in the city walks some distance or the other while going on work. And we do walk for various other purposes too, don't we? Then should not the Government provide good footpaths?

Even Courts talk of pothole free roads, hardly they speak of walkable footpaths.

Sudhir: Firstly, Adu, other than the National Highways and roads in the Union Territories, roads and transport is handled by the state governments. Further down, in cities, local bodies such as Municipal Corporations and Councils handle their roads. Road construction and repairs are one of the major expenditures in the annual budgets of Municipalities. There are other agencies of governments such as Public Works Departments and State Road Development Corporations which develop new projects and maintain infrastructure built by them.

Most of us would be surprised that a Comprehensive Traffic and Transportation Study Report released by Mumbai Metropolitan Region Development Authority in 2008 revealed that nearly 44% of the population in Mumbai uses only the walking mode to work and 3.1% use bicycles. Only 2.8% use personal motorcars. These figures have changed somewhat after the decline in Mumbai's local bus service provided by Municipal Corporation's BEST and more motorcars plying on roads resulting in greater road congestion and further decline in BEST bus services. But the proportion of motorcar users may not have gone beyond 4%.

In cities other than the megacities, much larger proportions use motorized two wheelers as well as bicycles. Although practically everyone walks, those who use only walking mode to commute in these cities is not as high as it is in Mumbai.

Our Constitution also guarantees Right to Life. Right to Life does not mean merely right to existence but means that it must be safe, meaningful life and one lived with dignity. We also have an Act of Parliament that spells out that Universal Accessibility be provided to enable Persons with Disability to lead a meaningful life as independently as possible with dignity.

Smruti: When I went to Bengaluru last Deepavali, Annu remember how we got stuck in a road congestion on the Outer Ring Road in the autorickshaw while traveling from Silk Board Junction to Esteem Mall after Hebbal lake, The air was so bad and journey so jerky that Amma felt very sick, not that we were in any better shape. Thank God we had left Adu and Ananya at home. Sudhir, I have experienced similar situation while traveling by the auto even on Mumbai roads. Any idea why it is so?

Sudhir: When we travel by autorickshaw in an uncongested traffic, Smruti, we feel quite fresh as there is fresh air ventilation because autos are of open construction. Unless the weather is very hot this ventilation makes the auto ride quite comfortable although noisy and on a bad road bumpy too.

However the scenario is quite the opposite when we travel by auto in a congested traffic. On congested road, the exhaust from motor vehicles carries some not fully burnt hydrocarbons like petrol or diesel and also has considerable carbon mono-oxide. Concentration of Carbon Mono-oxide can make one go dizzy and too much of it could be fatal.

Many times the auto halts adjacent to the exhaust of a bus or a truck whose outlet is usually directed to the off side and invariably into the small shelter of the Autos where passengers sit. The Auto driver normally moves ahead to avoid the direct blast on himself as he feels the exhaust personally but the foul air does enter the passenger section. Also, while in motion, the driver is protected by the wind shield from the rear exhaust of motor cars and two wheelers in front but foul air enters the passenger section rendering it a concentrate of foul air. Long duration of breathing foul air is the reason for the breathing discomfort and headache many a time, Smruti.

Yes one more thing I would like to say here is in regard to any young family. Many of them are actually a family of husband, wife and one or two small children. Firstly it is unsafe to carry babies in arm while riding a bike. To save a few rupees or few minutes, young parents are putting their children's future at great risk. They might survive an accident but if the head injury is severe, it is likely to render the child to live with a lifelong disability. Coming back to air pollution, the young couple often have a four or five year old to stand in the front on a scooter or sit on the fuel tank of a motorcycle. Besides it being unsafe position, what is not realized by them is that at that level, the air is in high concentration of foul air from vehicle in the front. Daily doses of such foul air leads to irreversible state of asthma the child will have to suffer in its teenage and beyond if not earlier.

Ananya: Aija kaka, how do you know all this. You seem to be like Google.

Sudhir: Choti, you are right, I sound like Google or as Smruti asked me the same question she was your age but used the word Encyclopedia.

Venkatesh: Choti, besides Ajjakaka being a well-read person, he has studied the subject and uses it in his work all the time. You can ask him to explain the Noise issue also.

Sudhir: Choti, Noise issue is a vast subject by itself. I will only tell you now that with increasing motorcars on the roads, the noise from the traffic is becoming a permanent health hazard just like emissions from their exhausts. Our objective should be how to lessen the air and noise pollution emanating from travel on the road.

Driving takes more or less the same time in a given state of traffic congestion whether one does it with patience or impatience. Driving with impatience leads to noise pollution, it being prone to causing accidents and self-exhaustion.

Ananya: Aija-kaka, Adudada got a motorcycle when he became 18 two months back. Appa tells me that I will not get bicycle even when I have turned 13. This is discrimination. He talks of roads not being safe for cyclists. The reality is that there are more accidents involving motorcycles reported in newspapers than those with bicycles. Not because I envy dada but because roads are so unsafe for motorcyclists that Appa should not have got him the motorcycle.

Sudhir: You are right Choti. Roads are unsafe for any two wheel rider, be it a motorcycle or scooter or bicycle. Pune at one time known as bicycle city has become a city of motorized two wheelers. This has to do with aspirations of the owner and affordability and equally important being of finding space to park almost anywhere.

A small nudge by another vehicle can easily cause imbalance and the rider and pillions can fall and get severely injured, especially if head is not protected. With the indiscipline of vehicles overtaking from the left, the bicyclist is nearly invisible to the driver overtaking from the left most lane. Therefore a bicyclist must necessarily wear helmet and reflective jacket.

On the other hand, motorcyclists take undue risks by squeezing in non-existing gaps to move faster than the average traffic speed. One error by him or a motorist or bus driver is good enough for him to be tossed on to the path of fast moving vehicles in the adjacent lane.

During monsoon, when potholes appear, usually the four wheel vehicle avoids it by letting it pass between the side wheels. A motorcyclist riding closely behind the four wheeler is taken by

surprise, the sudden appearance of the pothole. He either applies brakes as suddenly or runs over the pothole, in either case, he gets imbalanced and sometimes falls off on to the adjacent lane. Also, sometimes his sudden braking is not noticed by the vehicle behind and gets hit by it.

Even while riding a motorized two wheeler, the rider must not be in a state of hurry and keep good distance behind the vehicle in front, avoid squeezing into gaps and wear helmet.

Subhash: Why should potholes appear at all? Surely we are not that incompetent. It must be because contractors must be making money by providing inferior material.

Sudhir: Road making is not as simple as it is made out to be at the same time it is not a rocket science either. There are specifications for different uses of roads. Bitumen or asphalt roads provide smooth ridership but relative to concrete roads less durable. These roads use waste byproduct of petroleum. Concrete roads use cement which is in fact made from material mined from earth. Concrete interlocking paver blocks and cobbled stone roads are also not uncommon.

If the materials are made to their respective technical specifications and roads laid to its technical specifications starting from the sub-base layers of the road, giving due respect to drainage, bad roads are unlikely. But errors do occur in some part of the road making, some time from ignorance, sometimes by intent, leading to construction of bad roads.

To eliminate creation of bad roads, it is not enough to have good technical specifications but the Municipality as well as contractors must have trained engineers who can supervise the work. The contract must also be foolproof leaving no loopholes. All this also begins with proper design and working drawings.

As I said, road making is not rocket science but not as simple as it is made out to be.

Smruti: I see Metro Rail construction work has begun on the Western Express Highway. Some places it is on the edge of service road while at some other places it is on the median. It is taking away a lane of the highway. It is said that these projects will get completed by 2021. As it is all roads in Mumbai get clogged during peak periods of three and a half hours in the morning and in the evening as well. One less lane will cause greater congestion, more inconvenience and much delay. Why does government do things in unplanned manner? Look at how long it took to construct the 11 km of Versova-Andheri-Ghatkopar Metro line! Look at the dilly dallying coastal road and western sea link. These projects do not appear to be for the majority of people who have been traveling in atrocious conditions of superbly crowded suburban railway! It is said that they plan to construct about 172 km of Metro Rail network. At the rate at which the first line got constructed, it should take more than a hundred years. I feel very angry with the priorities of projects.

Sudhir: It is not that government does no planning, but as you said, it has got priorities all wrong. Growing cities need faster modes of mass transit, hence Suburban Rail or Metro Rail has been conceived. Metro Rail comes with modern technology but costs more. While these projects are conceived designed and executed by what they call Special Purpose Vehicles or SPVs, the areas of interconnections with the other modes of travel and traffic on roads, including pedestrian requirements are seldom looked into. Coastal road seems to have been opted for because the sea link would be twice its cost. But Metro seems to have been opted for as against the Bus Rapid Transit System despite the Metro being twenty times costlier.

If so much money is going to be spent on Mumbai alone can we expect much funds moving to projects in other cities? Have much due diligence been carried out by all governments? I get the feeling that it has not been done.

Smruti: Then what is the solution? Do we expect to see any improvement or not? How do we make government take correct decision?

Sudhir: It is difficult to get the government to take the right decision. There are too many people who feel that government knows best and government intention is noble. That is because people do not

know that there are alternatives available to government proposals.

Just to give an idea, the proposed 172 km of Metro rail at an average conservative rate of ₹ 600 Cr/km will cost about ₹ 1,03,200 Cr. The needed overall hourly capacity of additional public transport in Mumbai is about 1,80,000 persons per hour today, which can be met with the 300 km of BRTS in five to eight years' time while what is proposed for Metro is just about 1,08,000 pph in 2031. Going by one line at a time approach to avoid road congestions, optimistically it should not take less than 50 years. The present government wants to show that it can perform the functional stretches by 2021 by opening up several construction fronts. The question that no one seems to be asking or government telling the public is whether they do have the funds to cater to get these projects completed to provide the capacities. What happens if the government funds get diverted to other equally vital projects in other cities in the state and the country? After all these cities too need to be developed.

At ₹ 30 Cr/km rate for 300 km of BRT System in Mumbai, the cost will be ₹ 9,000 Cr. And the entire network could be put in place to required capacities by 2023-2025. It just has to be well planned and designed.

By putting BRT in place with adequate facilities to attract motorcar users, roads will get significantly decongested. Advantage must be taken of Taxi Cab aggregators for last mile connectivity for some motorcar users.

I am not pessimistic. I am hopeful that the governments will give due importance to sea rise effect of global warming and climate change and it will convert the proposed Coastal Road Project to Coast Protection Project with additional land reclaimed for creating accessible open public space or gardens with trees. It will expeditiously take up the BRT System of mass transit even as it is going ahead with the Metro Projects. Mumbai cannot afford delays in mass transit projects for whatever reasons, Mumbai will give utmost importance to seamless walking and cycling infrastructure and not just concentrate on infrastructure for vehicular traffic. It requires strong will and good committed designers to begin with.

Ananya: Aiji, where is the desert you were preparing? Oh, you are just putting them in the tray. Let me help in serving to all. For that I take one extra serving.

Smruti: Sudhir, that is enough dynam on road, safety, road congestions and solutions. Let us now enjoy the dessert and retire for the day. I have work to do tomorrow and you are taking the morning flight to Delhi. Amma and Annu will be taking the evening flight to Bengaluru. So the discussion on this subject is over.

Ananya: Please pleaseplease, Aayee. Only one last question.

Smruti: Okay Choti, be quick

Ananya: Aija-kaka, what is your closing slogan on the subject

Sudhir: "In the Era of Climate Change, prioritise walking, cycling and the BRT"

Ananya: What do you mean "In the Era of Climate Change?" and what is BRT exactly?

Smruti: Sudhir, you can answer that when you visit Mumbai next week. Choti, finish your dessert and get ready to go to bed. That holds for all, Adu, Amma-Annu and Sudhir. Venky you please wait, help me clear the dessert. Coffee and milk will be ready at six thirty in the morning. Sudhir, I assume you would be happy with only two cups of coffee that early morning. I can fix a cheese-chatney sandwich for you to carry to the airport.

