Dr Dinesh Mohan, Indian Institute of Technology

Dinesh Mohan is Volvo Chair Professor Emeritus for Biomechanics and Transportation Safety at the Transportation Research and Injury Prevention Programme, Indian Institute of Technology Delhi. He has been at the Indian Institute of Technology Delhi since 1979.


He is a member of the Indian National Transport Development Policy Committee, The Ministry of Road Transport & Highways’ Task Force on Traffic Safety, CII Urbanisation & Future Cities Council, WHO Advisory Panel on Accident Prevention, Board of International Research Council on Biomechanics of Impacts.

He serves on the editorial boards of: International Journal of Epidemiology, Journal on Injury Control & Safety Promotion, Crash Prevention and Injury Control, and, The Asian Journal of Transport and Infrastructure. Dinesh Mohan has been a consultant on safety related matters to government departments in India, Nepal, Indonesia, Thailand, Bangladesh, Iraq and Libya and automotive industries including TELCO, Ashok Leyland, Volvo Trucks, Eicher Motors Ltd., Escorts Ltd., Maruti Udyog Ltd., SIAM, Bajaj Auto Ltd. and also to international organisations like the World Bank and WHO.

Emerging Issues in Urban Traffic Safety

International road traffic fatality data show that low-income and middle-income countries on an average have higher road traffic fatality rates than high-income countries. However, neither the number reported by countries nor WHO estimates have a high correlation with national income. This suggests that higher incomes do not necessarily produce better road safety. The data indicate that even cities that have similar incomes, vehicle fleet ratios, motor vehicle standards and traffic regulations can have different fatality patterns. This is probably due to other factors influencing fatality rates: urban living patterns, street and highway infrastructure, etc. Recent studies suggest that there are similar variations in fatality rates among cities within countries that cannot be explained by income levels, vehicle technology or basic road design. The presentation will focus on the role of the built environment in promoting road safety and challenges ahead in safer road design.

International Experience on the Success and Failures of Bus Rapid Transit Systems

There is still no clear vision among planners, policy makers and transport experts about what cities in India need and what will make them better places to live in as far as mobility and access are concerned. The prevailing mythology is that construction of metro rail systems or Bus Rapid Transit Systems (BRT) will somehow solve problems of the future and they remain the single one point agenda of almost all transport consultants in around the world. Review of urban mass transport systems over the past century shows that metro systems were the obvious choice when relatively inexpensive cars and two-wheelers were not available. With the introduction of efficient buses, computer and information technologies to manage large fleets, and the need to have flexible, medium capacity systems that go close to homes and destinations, BRT with dedicated lanes is one of the substitutes for providing affordable mass transport in our cities. However, the concept of BRT has to be demystified. What we really need are dedicated lanes for public transport systems in cities. We need to expand this concept for providing such facilities for all kinds of vehicles, from cycle rickshaws to large automated buses and driverless vehicles of the future and come up with a cafeteria of street and city designs to enable cities of all sizes, densities and differing incomes to plan for a more sustainable future.

Injury Prevention for Children

A proportion of the decrease in road traffic injuries in high-income countries is the result of the availability of cars which provide much greater safety to the occupants in crashes, and the result of a very significant reduction of the presence of pedestrians and bicyclists on high-income country streets and highways. Recent estimates from UK suggest that the number of trips per person on foot fell by 20% between 1985/86 and 1997/99. Such trends suggest that reduction in pedestrian, bicycle and motorised two-wheeler fatalities could be largely because of the reduction in exposure of these road users and less because the road environment has been made “safer” for them. Data from Western Europe and USA indicate that children walking and bicycling to school may have decreased by more than 50% over the past four decades.
The main problem of safety as perceived by parents for children as commuters is not as passengers inside the bus, but as a pedestrian or bicyclist on the access trip. Such trends suggest that reduction in pedestrian, bicycle and two-wheeler fatalities could be partly because of the reduction in exposure of these road users and less because the road environment has been made “safer” for them. In less-motorised countries buses and trucks are involved in a much greater proportion of crashes than in high-income countries, but relevant safety standards for these vehicles are lacking. In particular, a strong case can be made for evolution of pedestrian friendly fronts for buses and trucks, but such issues are not given any priority at present. We have to look at the issue of children’s safety in a more comprehensive way, and from the point of view of children’s rights to use the road freely without the presence of adults supervising them at all times. This will need to establish a different view of the City Street and living patterns.

Climate change and transport

Cities across the world are trying to come to terms with issues pertaining to sustainable public transport and safety on their streets. There is growing awareness urban living needs to be more compact and friendly, less destructive of the environment. People are happier and healthier when they walk, talk and mingle. Policing is most effective when common values are reinforced through natural equations and shared spaces.

The modern city, invented in the Twentieth century, with wide sweeping roads and impersonal housing, is being discarded for a friendlier urban form, which was interwoven and organic. The built environment has a direct bearing on the quality of life. Short blocks, space for pedestrians, effective lighting and safe public transport provide a sense of well-being.

Efficient public transport reduces the carbon foot-print of the city. Less pollution and an active life are good for the health of people. Taking the bus or train or mingling on the street also helps to bring down social barriers. But recent research shows that lack of safety keeps people away from public transport. Instead they opt for personal vehicles such as cars and two-wheelers. It has been found that crime and accidents can increase when roads are too wide or traffic moving too fast, and this becomes the main deterrent to boarding buses, cycling or walking.

Safety in a city, therefore, has a direct bearing on cleaner air. The more people use personal transport, the greater the level of auto-mobile emissions. The more people use public transport or just walk and cycle, the cleaner the air. Therefore, making cities safer becomes an essential condition for ensuring cleaner air.