

MAKER AND BREAKER OF CITIES

*Mr. Vice Chancellor, Deputy Vice Chancellors,
Deans of Faculties, Post-Graduate School, and
Student Affairs, Academic Colleagues, distinguished
Ladies and gentlemen.*

PREAMBLE

On Friday 30th January 1970, I went to the then University of Ife (now Obafemi Awolowo University) to sit for the Concessional Entrance Examination to that great institution. I knelt down under the shower on the morning of the examination, and prayed thus, – “God if you would grant me this admission which I greatly desire, even if I am asked to leave two weeks after, I will be glad and eternally grateful to you”. Our understanding and merciful Father granted my prayer but very kindly ignored the codicil. Again in 1975, as a young postgraduate student, my teacher and mentor the late Professor Babafemi Ogundana, the first Professor of Transport Geography in Nigeria asked me to lead the first Transport Geography Class Seminar for the session. I chose the topic “Transport as Spatial Science”. After my presentation, which was very well received, I again prayed thus, – “God if by your grace I become a Professor of Transport Geography, the title of my Inaugural Lecture would be Transport as Spatial Science”. But since becoming a Professor of Transport Geography in this University some 12 years ago and based on my national and international exposure, I have come to realise how puerile my thought on this topic has been. Through scholar’s theoretical and practical exposition of transport as a discipline, I have seen that the nature and content of the subject is multifaceted. I am indeed humbled by the limitless horizon of this area of geography, which I often claimed as my own.

These incidents are noted at the outset of this lecture to highlight two important things. First is to show the wonderful work of God. Over the years, I have learnt to put my desires before God in prayer, work hard towards the achievement of such desires, and trust that He will do the best in my life. This has worked. Second is to highlight the futility of claims that one is knowledgeable. In fact, the more I read about Transport Geography, the more I realise the extensive nature of the subject, so much so that sometimes, I am wont to exclaim in the words of Alexander Pope in An Essay on Criticism:

*A little learning is a dangerous thing;
Drink deep, or taste not the Pierian Spring:
There shallow draughts intoxicate the brain
And drinking largely sobers us again.*

I have drunk deep and I am greatly sobered by the vastness of transport geography. Even within the small area where I specialise, recent trends indicate new perspectives in the study of the discipline turning me into a student all over again in order to learn them.

Mr. Vice Chancellor sir, it is good to talk about transport and let me confess that I feel real good talking about transport. If the question is asked, what are the basic necessities of life? The quick answer will be that they are food, clothing and shelter. But a little reflection perhaps will show us that without transport, these so called necessities of life would be difficult to achieve if at all. Just as the internal organs of the human body work for the survival of the whole body, so does transport work as the life wire of our social, economic and political life and its importance is hardly noticed until something goes wrong. Without transport, life as it is today would be inconceivable. Transport is particularly crucial in the existence of a city and the existence of a city creates greater

demand for transport. Agricultural products and industrial raw materials have to be brought to cities, while manufactured goods must be carried to consumers both within the cities and the hinterlands. Waste must be carried and disposed of and people must move in the daily performance of their social and economic activities. So pervasive is the role of transport that Orski (1980) explained:

.....few technologies have effected modern society profoundly than has the motor vehicle. Automobiles and trucks have eliminated rural isolation, transformed urban development patterns, opened up new forms of recreation and changed our behaviour and life style...more than any other contemporary invention, the automobile has left a deep and permanent imprint on virtually every aspect of our lives...

Like we all know, a knife is a wonderful tool in the hands of a craftsman. But the craftsman will also tell you; this same knife can do great damage when misused. Mr. Vice Chancellor, Ladies and Gentlemen, herein is the import of the message I intend to impart today. Wonderful as the role of transport is in our social, economic and political life, it is beset with myriad of negative externality effects, which, if not well managed, could tend to wipe out the benefits associated with it. It is not surprising therefore that Clark (1958) described transport as the maker and breaker of cities. The objective in the geographical study of transport is centred on how to maximise the benefits of transport and minimise its negative effects.

In this lecture, I intend to show how transport has built cities over the years and how it is gradually destroying them. I will also touch on the remedial measures that are

being taken and must be taken to reduce the negative externality effects of transport in cities.

WHAT IS TRANSPORT?

Transport, because of its multi-disciplinary nature defies any rigid definition. Transport is a subject of interest to the engineer, the economist, the sociologist, the political scientist, the historian and the geographer, each with his own perspective. Transport engineers are concerned with the design, construction and maintenance of vehicles, infrastructure and facilities; transport economists deal with the analysis of transport demand and the cost of meeting this demand in relation to other forms of economic activities; the transport historian is concerned with the evolution of transport facilities in relation to past societies and economies in explaining modern transport system. The political scientists and the lawyers are interested in transport because it is subject to some forms of political control and legal regulation. The viewpoint of the geographer in transport is spatial. Distance and location are basic to the understanding of spatial distribution and interrelationship of phenomena. Transport is a measure of the relations between these spatially located phenomena. As observed by White (1977):

For the geographer, the importance of transport lies in its being one of the principal factors affecting the distribution of social and economic activity. Thus there is a wide interest among geographers either in transport per se as a significant human activity, or indirectly through its influence upon the spatial distribution of other activities.

Transport geography emphasises the essential interactions between the transport systems and other spatial processes. The emphasis on the importance of transport as a

branch of geography dates to the 17th Century. But, as an academic discipline and professional component of geography, it is relatively new. Over the last five decades, transport geographers have perceived the study of transport as a discipline in varied depth but the interest has remained the same. The issues of interest in the geographical study of transport revolve around:

1. Inventory of transport facilities (with specific reference to the stock of networks and equipment).
2. Transport modes (with reference to the types of vehicles used in movement).
3. Transport network (with reference to the structure/pattern of the transport routes).
4. Traffic flows (with specific reference to why movement occurs, how intense and what spatial pattern results from the movements).
5. Interrelationship (which identifies the impact of transport on the environment).

The study of transport as outlined above, is a response to the ever-growing need of man for movement and the transportation of goods from various origins to destinations. Transport geography lies in the heart of the interlocking relationship between the transport systems designed to effect these movements and the environment in which the interactions take place. The importance of transport can therefore be seen in the daily rural, urban and regional movements.

TRANSPORT AND THE CITY

Various principles have been advanced to explain the origin and existence of cities. The earliest submissions indicate the object of cities as military, political, cultural, religious and economic. More recent arguments by Carter (1977; 1983) also advanced these themes when he outlined

the environmental, economic, military and religious factors for the existence of cities. These conditions are no doubt crucial for the existence and growth of cities, but they do not explain the object of their existence. Aristotle in one of his early works on politics had explained that:

Men came together in cities in order to live; they remain together in order to live the good life

This “good life” may be interpreted as the enjoyment of social surplus. Harvey (1973) argues that, “Cities are formed through the geographic concentration of social surplus products.” These submissions, however, are silent about the important role of transport. As far back as 1894, Cooley in his theory of transportation had explained:

Two influences chiefly determine the location of cities: local facilities for production and location relative to transportation. The former of these acts mostly through the coarser and primary manufacturing industries. The finer manufactures seek the most convenient centres of distribution, that is, of transportation.

Ratzel (1903), a renowned German Geographer emphasised this view explaining that:

Cities arise at the end of a route of transportation, or at a junction; joins another, where for instance a land transportation route ends and a waterway begins.

But the process of city growth and development is complex. It involves several factors, none of which is capable of singularly effecting a change in the process of a city growth and development. In spite of this, transport stands out clearly as a catalyst in this process. The modern

city is a centre of industry and commerce, a point for collecting, producing and distributing commodities of all kinds. Its location and the location of the various land use within it must therefore be as accessible as possible.

Cities do not produce all they require for their existence. They depend on the rural areas for food and raw materials. Goods manufactured in the cities must be distributed to spatially dispersed consumers. To pay for these goods, urban residents must go to work. To maintain city facilities, there must be efficient transport to move the municipal workers. Cities as we know them today are, therefore, not possible without transport which allows the movement of people and goods that make the city function. Modern cities in all their ramifications are, therefore, a product of transport.

TRANSPORT AS MAKER OF CITIES

Several attempts have been made to generalise the growth inducing influence of transport on cities. At the regional level it has been found that the existing urban hierarchies owe their spatial pattern to transport. A good example is that demonstrated by the work of Rimmer (1977). The study shows how the colonialists used the development of hybrid transport to penetrate the developing countries. The result is the restructuring of the pattern of city development and resource use. **Figure 1** shows the stage-by-stage evolution of cities as a result of this process. The first stage shows a third world country and a developed country separated by a long and unconnected distance. In the developing countries there can be observed scattered small settlements linked with tracks. The second stage depicts contact by sea and the development of foothold settlements in the form of trading ports and garrisons. The third stage involves some fundamental change in the transport system. The introduction of railways, roads and port facilities leads to

diversification in the economy, especially in industrialisation and commercial agriculture and the growth of urban settlements. The fourth stage involves a further diversification of the economy. Modern transport system evolves and this leads to rationalisation, adaptation and selective investment in response to changing demand. The overall result is rapid urbanisation with the initial and major urban centres located along the coasts where maritime transport provides interaction linkage.

Apart from Rimmer (1977), the works of Taaffee, Morrill and Gould (1963) and Vance (1970) have similarly explained the interrelationship between transport and the growth of cities. The Taaffee, Morrill and Gould model is particularly significant as it represents the parallel evolution of economic, political and city development in Ghana and Nigeria on which their initial studies were based. A similar effect of transport also exists at the intra-city level. Cities are made up of different land uses. Transport helps to explain the arrangement of these land uses. In the pre-motorised period, when the means of movement is by foot, cities were essentially concentric with land use arranged close to the city centre. The use of horse cars and trains led to a ribbon city form. The advent of the automobile in the cities results in complex city form with criss-crossing road network and traffic. **(See fig 2A-E)**

The spatio-temporal evolution of land use resulting from the development of transport can be ordered into distinct phases of:

1. The pedestrian city.
2. The horse bus and tramway city.
3. The early railway city.
4. The later rail and early bus city.
5. The car and other private transport city.

The pedestrian city represents the situation where the only means of transport in the urban area was by foot. Cities in this category were often described as foot cities. The distinct morphology of the city was concentric (**see figure 2A**). A dominant feature of the city at this time was a form of functional integration where jobs and residences were located in the same place – the objective, being to minimise the distance traversed in the daily movement between spatially separated land uses. Within the pedestrian city, there is an intimate mixture of land uses which can be identified as functional integration, such that a single building housed people, as well as provided space for manufacturing, storage and selling – a mixture which will be illegal in present day cities.

The horse bus city is manifested in the construction of crude roads built to take wheeled chariots. A common means of movement in the city of ancient Rome were the horse drawn carts which competed with pedestrians going to work, to shop or for recreation in the use of the narrow street routes. The horse bus city was still concentric, (**see figure 2A**) as not much distance could still be traversed. Mobility was dependent on the vagaries of the weather and the health of the beast of burden, which were prone to viral infection. Restricted by the friction of distance, cities then did not greatly expand geographically.

The development of the railway brought improved mobility as large number of people could reach distant places within a relatively short period. The introduction of this improved mode of transport led to city sprawl and a greater separation of the work place from residence. The concentric morphology of the city changed and growth occurred along the railway corridors leading to a sector pattern of urban form (**see figure 2B & 2C**). Land use development along the railway corridors implied greater interaction and the need for improved mobility. The building of railways made this outward expansion possible.

This development of fast railways and the subsequent introduction of commuter bus system accentuated the expansion of the city along sector pattern. A notable development at this stage was that of special nuclei along the wedges, which is the result of the decentralisation of the functions of the Central Business District (CBD) and the creation of minor ones. A significant feature of the railway age is that faster, more reliable and cheaper means of transportation became available and affordable. Thus, long distances could be traversed within a relatively short period. In the early days of the railway, the transport corridors in and out of the cities were, in effect, linear cities in their own right. They radiated from the centre like spokes of a wheel. Each spoke had the centre of the metropolis at one end, the country at the other end with a series of small centres in between. The outward expansion of cities was made possible first by the railways, then by electric trams.

The arrival of the motorcar and other forms of personal transport conferred different accessibility advantages on intra-city locations and encouraged further functional segregation and the development of specialised land use (see **figure 2E**). **Table 1** provides the main features of this process of urban transport development. The effect of this transport development on the growth of the urban environment is depicted in **Figure 3**. The sequence observed in the spatio – temporal development of urban transportation indicates that with the development of each mode of transport, the demand for interaction increased so rapidly that man became preoccupied with how to improve mobility.

THE CASE OF NIGERIA

Before the advent of colonialism, Nigeria had already evolved its own system of cities. Sokoto before the end of the 19th Century had emerged the most populous city in the northern part of the country. Cities like Kano, Kukawa, Gumel and Zaria, each with a population of about 60,000 inhabitants already existed and served as administrative and commercial nodes in the international trade activities across the Sahara. Along the caravan routes, asses, bullocks, camels and mules provided the means of transport that facilitated the growth of urban settlements. In the South, similar urban centres existed, such as Saki, Iseyin, Ogbomoso, Ede, Iwo, which were important administrative centres. Calabar, Port Harcourt and Lagos were coastal trading points and cities of the hinterland gained their importance through linkage with them. City growth and development were therefore along transportation routes, transport intersections, or at points where land transport route ends and waterways begins, confirming Ratzel's observation, and Rimmer's theory. The structure of traditional urban centres in Nigeria before the advent of the automobile was concentric. Two or more roads sometimes radiated from the centre running to the outskirts of the town and a number of narrower roads led away from these main roads. According to Mabogunje (1968) these main roads were wide and impressive and served as major thoroughfares for pedestrians on market days and recreational areas for dancing and for processions.

TABLE 1: SEQUENCE OF URBAN TRANSPORT DEVELOPMENT

PERIOD	TRANSPORT DEVELOPMENT	FEATURES
Before 1800	Pedestrian City	Heavy land use mix, functional integration (residential, manufacturing, wholesaling and retailing all in the house) Distance travelled limited. Narrow winding footpaths. Urban structure is concentric to minimise distance travelled.
1800-1830	Horse Bus And Tramway City	Horse and steam carriages in the 1880's. Horse trams in the 1880's For example tramways were popular in London in 1870 and in Liverpool in 1886. Electric trams came in 1891. Improved roads for horses. Faster journeys. Mobility dependent on weather and health of the horses: Services were unreliable. Concentric urban structure to minimise travels.
1830-1870	Early Rail City	First wagons on wooden rail in 1605. First Railway Act in 1758. Rail first demonstrated in cities in 1836. Rail laid the foundation for rapid city expansion. Functional segregation began. Improved interaction and Sector city development, Environmental pollution started.
1870-1900	Later Rail City	First world underground railway in 1863. Improved mobility. City expansion and spatial specialisation. Coaches since the 1820's. Cheaper, faster and more reliable mode of transport. Increased demand.
1900-1995	Automobile City (Car Bus, etc)	First passenger car in 1801. First successful petrol engine car in 1885. By 1899 large number of small cars. The first omnibus was in 1903. By 1905, there were 200 buses in London. Intra-city movement increased rapidly as the automobile revolutionised transport. By the 1920's there was massive car production. Urban spheres of influence expanded. By the 1950's serious traffic congestion, parking, environmental and accident problems. Traffic management measures evolved to reduce the negative effects.
21 st Century	Car less city	?? A possibility with advances in information Technology (IT)?

Source: Ogunsanya 1995

According to Mabogunje (1968) these main roads were wide and impressive and served as major thoroughfares for pedestrians on market days and recreational areas for dancing and for processions. The streets also served as the locale for the dispensation of justice and dissemination of knowledge. It was in the town square that the council of elders often met to adjudicate and settle disputes, discussed and debated thorny issues and dispersed wisdom. Besides, the palace of the *Oba, Obi, or Emir* was always situated at the city centre. This is apart from its being the commercial, administrative and recreational centre. People settled around this centre in a concentric form to minimise the distance travelled in the absence of mechanical transport. Mabogunje noted a similar situation for Ibadan, Schwerdtfeger (1972) in reference to Zaria and Ogunsanya and Aderamo (1993) in the case of Ilorin (**Figures. 4 & 5**).

But these ancient cities of Nigeria were very small in size compared with modern cities. For example, Bowen (1856) reported that Ibadan then had a population of 70,000; Lagos 20,000; Ogbomoso 25,000; Abeokuta 60,000; and Oyo 25,000. The cities were well planned with footpaths linking major activity areas. In Ibadan, Mabogunje (1968) reported how such concentric structure was broken by transport. Gbagi was the central area and two roads ran through it. The first ran North to South by Mapo and the second ran West to East of Gbagi. These roads formed the axis along which development occurred in a sector form. In Lagos Island the construction of Marina Road in 1861 by Mc Cosky, a merchant, and of Broad Street shortly after, marked the beginning of sector development. A similar situation has been reported for Jos, Ile- Ife, Ilesha, Kano and Zaria. As transportation developed breaking the walls of the traditional cities, so also did cities began to develop, sprawling far out from the nucleus of the city (**see figures 4, 5 & 6**).

TRANSPORT AS BREAKER OF CITIES

The exposition so far on the role of transport in cities indicates that transport is a powerful force in the growth and development of cities. Transport reshapes urban development pattern, opens up new activity areas and encourages interdependence. Pontus (1984) in noting this pervasive effect of transport on cities remarked:

No other technical innovation has altered life as radically as has the automobile. It has changed our cities, the landscape and the way we use it, the environment, architecture, our lifestyle.

But is it not ironical, Mr. Vice Chancellor, ladies and gentlemen, that it is this same transport that works to inflict heavy damage on the city it has painstakingly built tending to “break” it down? I have used the term ‘break’ in this context as hyperbole to connote the state of the negative externality effects brought upon urban commuters and residents by the automobile. These negative externality effects of transport are examined under the following:

- a. Competition for Space
- b. Traffic Congestion problems
- c. Cost and Family Ties
- d. Traffic Accidents
- e. Environmental Pollution
- f. Traffic Noise.

(a) Competition for Space

Space in urban centres may be categorized into two – exchange space and movement space. The exchange space is made up of residential, industrial, educational and commercial land use, while the movement space relates to space allocated to transportation facility such as roads, motor parks, interchange points etc. As a city transportation

system expands, it takes up more space. The construction of new roads, the expansion of the existing roads, the building of parking lot require the acquisition of part of the exchange space. Although urban planning allocates about 30-35 percent of urban space to transport, movement space is today consuming even much more. Unfortunately, the more space allocated to transport, the greater the requirement for more traffic space. There is therefore a self – perpetuating cycle where roads generate more traffic, which requires more road space, and later generating more traffic etc. The automobile therefore has an insatiable appetite for space. It uses space at home, at work, shopping places and even when some of these spaces are empty, it is tied up or reserved for the automobile. Automobiles do not only have exclusive space for moving, they also have a “zone of influence” which expands as the speed and quantity of traffic increase, thus reducing the effectiveness of the exchange space and the level of interaction.

A man once expressed how he and his wife frequently exchanged greetings and pleasantries with a family on the opposite side of the road. But a few years later, the road was widened into a multilane highway, consuming virtually all the activity space in the street. Crossing the road became very difficult and dangerous, visits became increasingly impossible and the friendship died predictably (Engwicht 1999)

(b) Traffic Congestion

Traffic Congestion occurs when urban road network is no longer able to accommodate the volume of traffic that uses them. This situation is caused by rapid growth in motorisation with less than corresponding improvement in the road network and related facilities. Congestion increases travel cost and causes physical and psychological discomfort. It creates stress and frustration, irritability, high blood pressure and cardiac irregularities. In 1979, the

Texas Transportation Institute studied 68 cities in the United States of America and observed that congestion cost in these cities amounted to \$72 billion. In Britain, drivers lose about 1.5 billion man-hours a year to traffic congestion.

If we think congestion problems are not too bad for now, the forecast of global traffic volume is that it will double between 1990 and 2020 and again by 2050 (Engwitsch 1992). This is an indication of what the future portends for urban transportation.

(c) Cost and Family Ties

The cost of owning a car by a working class family remains quite high in spite of the advent of "*Tokunbo*" vehicles. Consider the amount of loans such as, co-operative loan, car refurbishing loan etc. taken to purchase a car. Some car owners even end up working for car dealers in a bid to meet the obligations of hire purchase and to prevent the purchased car from being impounded. This is apart from the cost of maintenance, the pains of finding honest and reliable mechanic, the cost of fuel and all other hidden and open-ended expenses. In terms of family expenditure, the automobile competes favourably with other important family commitments. In fact, it sometimes gets priority over payment of school fees and meeting of other urgent family obligations.

This situation is aptly expressed in a Russian wisecrack, "Owning a car brings joy twice in the owner's life – when it is bought and when it is sold. In between is only torture." The cost of getting around on four wheels can be enormous indeed.

(d) Traffic Accidents

More than 30 million people have died and over 15 million had been injured in car accidents worldwide since the debut of the automobile some hundred years ago. As of

1990, traffic accidents ranked as the world's ninth killer. The International Federation of Red Cross and Red Crescent Societies (IFRCS) predicts that by 2020 it will become the third leading source of death. Over 70 percent of these global road accidents and deaths occur in the developing world. Unfortunately majority of the people that die in such road mishaps are in their productive age. For those who survive, they do so mostly with disabling injuries and other accident related psychological disorders – such as post-traumatic stress disorder (PTSD), acute stress disorder (ASD) and post-shock daze (Alvord 2000).

(e) Environmental Pollution

The automobile is a significant contributor to environmental pollution problems of urban centres. In 1950, Haagen Smit, a biochemist, deciphered the chemistry of smog and attributed it to automobile emission. This elicited strong protests from the car and oil manufacturers in the United States. But over the years it became clear that Haagen Smit was not wrong after all. Internal – combustion engine cylinders have been confirmed to emit Carbon Dioxide (CO₂) Carbon Monoxide (CO), Volatile Organic Compounds (VOCs); Oxides of Nitrogen (NO_x) and other particulate matters. The extent of pollution depends on the age of the vehicles, the type of vehicles and the quality of fuel used. The effects of the pollutants are devastating. For example;

- a. Oxides of Nitrogen (NO_x) have been found to irritate the lungs, increase susceptibility to respiratory diseases. It aggravates the formation of acid rain
- b. Volatile Organic Compound (VOCs): can cause fatal blood diseases. Benzene, one of its derivatives, can lead to leukaemia and cause chromosomal damage.

- c. Carbon monoxide (CO), which is odourless and colourless, is another dangerous pollutant from automobile exhaust. It is particularly deadly in closed places as the CO affects the haemoglobin and prevents oxygen from getting to the brain, the heart and other tissues. Exposure to CO at levels of 600 parts per million volume can kill a person in less than ten hours. One hour exposure in traffic congested area can impair perception, vision, and mental acuity and can cause headache.
- d. Lead is also a serious emission problem, which causes neurological problems in children. It can cause learning disabilities, reduced attention period, hearing loss, anaemia and nerve damage.

In the United States, Makower (1981) has estimated that 55% of cancer cases is attributable to air pollution caused by car and truck emission.

(f) Traffic Noise

Noise is an unwanted sound. Traffic noise comes from vehicle engines, exhaust system, brakes, horns, stereos and alarm systems. Busy urban roads generate between 70 – 85 dB of noise, depending on the characteristic of the traffic, speed and type of road surface. Given that even at the tolerance level of about 66 – 68 dB, a significant number of people are irritated, the negative effect of noise on health is best imagined. It increases stress, destabilises hormone levels, increases the propensity for high blood pressure, causes digestive disturbance and affects sleep and learning. But because we are constantly exposed to high level of traffic noise, we hardly pay attention to its negative effects.

With the foregoing negative externality effects, if cities were invented to facilitate the exchange of friendship, culture, emotion, psychological and spiritual support, transport is making it increasingly impossible.

THE CASE OF NIGERIA

These negative externality effects of transport manifest in different degrees in the urban centres of Nigeria. Because most Nigerian cities pre-date the automobile, houses and activity space have to be destroyed to give room for parking lots and right of way for the automobile. The expansion of roads and the building of flyovers in various parts of metropolitan Lagos led to the destruction of residential houses and the displacement of many families. Also in the new Federal Capital territory, a large number of houses were destroyed recently in Nyanya to give room to the dual carriage way being constructed between Nyanya and Abuja city. Although in these cases, such displaced persons are relocated and/or compensated, there is usually a permanent break in friendship that has been cultivated over a long period of time.

Traffic congestion is another major transportation problem of Nigerian cities. The chaotic situation is observable in virtually all the streets of metropolitan Lagos (see plates 1 & 2). The streets of Ibadan, Abuja, Kano, Kaduna, Onitsha, Aba, and Port Harcourt depict various levels of traffic congestion. Even the medium urban centres like Ilorin are beginning to witness congestion problems. The cost of congestion in urban centres of Nigeria if computed will be enormous. In a study on the contribution of freight vehicles to congestion problems along Wharf Road in Apapa, Lagos, Ogunsanya (1983a) estimated that the cost of congestion on that route alone amounted to N22.4 million in 1984 or 3.3 billion Naira at 2002 prices.

In Nigeria, road traffic accident situation over the last three decades has been particularly disturbing. In 1976,

there were 53,897 road traffic accidents resulting in 7,717 deaths. Although in 1981, the magnitude reduced to 5,114 accidents, but the fatality increased to 10,236, which means that there was an average of 96 accidents and 28 deaths for everyday of that year (Ogunsanya, 1990). The situation in subsequent years has not been any better (**see table 2**). The number of people killed in road accidents between 1990 and 1993 rose from 8,244 to 9,707 and the fatality rate remains consistently high.

International comparison indicates that the chance of a vehicle killing someone in Nigeria is 47 times higher than in Britain. The proportion of fatalities to injuries reported is also very high. For example, while Czech Republic has only one death in 175 accidents, France, one death in 175, South Africa, one death in 47 accidents, Nigeria has one death in 2.65 accidents. The factors accounting for this are varied (**see table 3**).

Traffic accidents are costly to the nation. Goods in transit are destroyed, people are killed or injured leading to loss of present and potential manpower; damaged transport infrastructure will have to be replaced. This is apart from the agony of the bereaved and the productive time spent for burial and mourning. The economic cost of traffic accidents in Nigeria which is estimated by Arosanyin (2001) at N1.9 billion in 2001 is enormous indeed.

Road transport safety therefore is an issue of great concern to all Nigerians. Everyday, newspapers carry shocking news of fatal road traffic accidents. Below is an example:

From Lagos to Maiduguri, from Kano to Port Harcourt and from Calabar to Kano, the common sight on our highways is carnage upon carnage. On hourly basis, our roads are littered with the blood of helpless Nigerian citizens who are unfortunate victims of road accident. As charred carcasses of crashed vehicles dot our highways, so also are mangled bodies of auto crash victims. Hospitals are congested with the wounded ones who suffer from various degrees of injuries ranging from broken skulls, bruised faces, strained joints to fractured limbs and dislocated backbones

(The Monitor on Sunday, March, 2002)

This, no doubt is a significant negative externality effect of transport.

It is sad to note also that the concentration of pollutants occasioned by the automobile in Nigerian cities is rising in proportion to the population and age of the vehicles, especially in the case of lead concentration. Ameyan (1996) observed that a trend analysis of air pollution in Nigeria over the last 40 years indicates that road transport contributes more than 60 percent of the emissions, except Sulphur Oxides (**see table 4**) Guidelines for the ambient limits to some conventional pollutants as it relates to the automobile are as given by FEPA (**see table 5**). Virtually all the pollutants exceed the level that is considered safe for health. The poor conditions of many vehicles due to poor maintenance, the importation of discarded vehicles that did not meet emission control standards in Europe and elsewhere, low quality fuel and the concentration of vehicles in urban centres all contribute to the problem of pollution. Predictably, the poor common man in the street is always more exposed to these noxious fumes and lead emissions. Their situation is worsened by the fact that sold food in open-air road side “bukas” frequented by them is mostly contaminated by emission gasses putting them in double jeopardy.

Table 2: Trend in Road Accidents in Nigeria

Year	No. of Accidents Recorded	No. of Fatality recorded	No. of Persons Killed	No. of Persons Injured	Fatality Index (death per 1000)
1988	26792	??	9077	24413	0.35
1989	23957	??	8714	23687	0.36
1990	22018	6277	8244	22884	0.32
1991	22632	6766	9221	24644	0.36
1992	22909	6985	9620	26279	0.36
1993	21610	6817	9707	24373	0.39
1994	17633	5300	7296	18289	0.31
1995	17003	4701	6771	14668	0.30
1996	16793	4798	6364	15290	0.39
1997	9034	2082	3616	10786	0.38
1998	16046	7458	6538	17341	0.37
1999	12427	3634	5429	17728	0.41
2000	12705	3686	6521	20677	0.43

SOURCE: FEDERAL ROAD SAFETY COMMISSION 2001

Table 3: Factors in Road Traffic Accidents in Nigeria (2001)

MONTH	RD	NT	PW	O/E	SV	SOT	OTHERS	TOTAL
JAN	61	56	13	65	30	143	89	457
FEB	79	46	10	98	31	171	60	495
MAR	52	59	6	85	50	259	71	582
APR	44	35	9	80	25	132	51	376
MAY	57	50	19	68	58	331	74	657
JUN	125	75	63	144	69	299	51	826
JUL	57	23	12	46	30	101	57	326
AUG	54	24	42	72	38	98	235	563
SEP	33	33	38	70	39	109	228	540
OCT	46	29	17	79	36	158	153	518
NOV	68	44	11	88	25	243	88	567
DEC	50	28	12	53	20	121	48	332
TOTAL	726	492	252	948	451	2165	1205	6239
%	12	8	4	15	7	35	19	100

KEY: RD - Road Defect , NT - Night time, PW - Poor weather, O/E - Overloading/Break failure,
SV - Stationary vehicles, SOT - Over-speeding/Overtaking, OTHERS - Other causes

SOURCE: Federal Road Safety Commission 2001

Table 4: Percentage Contribution of the Transport Sector to Man Made Emission in Nigeria

POLLUTANTS	NIGERIA	LAGOS
CO ₂	40.81	45.65
CO	82.80	86.58
NO	58.60	61.31
SO ₂	97.74	26.91
VOC	21.97	98.77
N ₂ O	77.06	40.40
PM	77.02	83.41
Pb	97.76	100.00

Source: Ameyan (1996)

Table 5: Tolerant Limit for Ambient Air Pollution in Nigeria.

POLLUTANTS	LONG TERM LIMITS		SHORT TERM LIMITS	
	Mg / M ³	HOURS	Mg / M ³	Mins.
Carbon Monoxide	1.0	24	5.0	30
Lead	0.005	24	0.002	30
Lead Sulphide	0.001	24	-	-
Nitrogen dioxide	0.085	24	0.085	30
Nitrogen oxide	0.004	24	0.1	30
Ozone	0.1	24	0.2	30
Soot	0.08	24	0.008	30
Sulphur dioxide	0.05	24	0.5	30
Suspended particles	0.15	24	0.5	30

Source: Ameyan (1996)

Despite all these negative externality effects, Mr. Vice Chancellor, it seems to me that the city and the automobile are irrevocably married, for better or for worse. The question now is how do we make the marriage better?

URBAN TRANSPORTATION AND THE GEOGRAPHER

In Nigeria, virtually all road users share the concern about the traffic situation. It is an important issue of discussion among commuters, in the media and even musicians have waxed songs about it. The music of Fela Anikulapo Kuti, such as "*Suffering and Smiling*", where he noted for Lagos public transport, "*49 sitting, 99 standing*" and "*Pafuka*," where he depicted the chaotic traffic situation at Oju-Elegba, created by high vehicle concentration, rough driving and the absence of traffic control at the intersection are pertinent. There is also the Ebenezer Obey's song, "*you don hit my car - oyinbo repete*" and the rap-modified version, "*you don hit my car, gbese repete, Tinubu, you don hit my car, my life don better oo*" etc. Also illustrative are the sonorous voices on radio such as that on Radio O-Y-O, "*onimoto rora sare o, emi o laro, onimoto rora sare, eso pele oni moto rora sare*" which means – "driver, drive with care as there is no replacement for life, be careful". All these demonstrate the concern of people about the negative effect of transport in the cities of the country.

Geographers, however, stand out clearly in their contributions to mitigating these negative effects. They provide the basic understanding on the dimension and the causes of the traffic problems with the objective of effecting a change. Although understanding, it may be argued, does not necessarily bring change, but it is certain that no sensible change can take place without adequate understanding. No wonder David in Psalm 119: 34, in his desire to change for the better, asked God:

*Give me understanding that I may keep Thy law
and observe it with my whole heart.*

There are three major ways in which geographers have contributed to the understanding of the problems, dimensions and causes of urban transportation. These are:

- (a) identification of the causes of urban transport problem
- (b) explanation of urban movement pattern and travel characteristics
- (c) evaluation of urban traffic management and policy

Causes of Urban Traffic Problems

Unlike other urban problems, crisis in urban transportation quickly manifests itself in congestion, delay, accidents, parking difficulties and environmental pollution. Ayeni (1983) described these as the most pressing and most visible urban problems of Nigerian cities. Geographers assess the nature, severity, dimensions and overall effect of these transportation problems on urban residents. In examining the urban traffic problems, Adefolalu (1977) attributed the causes to inadequate road infrastructure and poor driving habits. Oduola (1981) explained that most urban congestion problems are caused by the sub optimal manner in which the roads are used. Roadside and on-road parking, roadside trading and total disregard of traffic regulations by road users are significant human contributions to the traffic problem. In a study carried out by Transpoconsults (1976), about 44.4 per cent of the total parking in Lagos obstruct free movement of traffic. When categorised as illegal and undesirable parking, illegal parking accounts for 66.4 per cent. In another study, Ogunsanya (1983b) observed that illegal parking alone accounts for 30 per cent of the cause of delays along Bamgbose, Igbosere, Ipodo, Bajulaiye, Ereko/Balogun and

Ojoo roads. On these roads an average of about 1.2 metres of effective road space is lost to parking. The overall effect is a reduction in road space and the stifling of traffic flow. But Ogunsanya (1984c and 1989) has also argued that these traffic delays, congestion and parking problems are mere symptoms of a malfunctioning urban traffic system which can be explained by some basic reasons and underlying factors (**Fig. 7**). The basic reasons are route inadequacy, human misuse of transport infrastructure, poor traffic management, absence of traffic and transportation planning and the upsurge in urban travel demand. The underlying factors include financial constraints, inappropriate political decision and the absence of planning data. Unless these basic reasons and underlying factors in the urban traffic problem are adequately addressed, the symptoms of malfunctioning transportation system will not abate (Ogunsanya 1985b, 1989).

In examining the data problem, Ogunsanya (1985a & b) built a model for generating urban traffic data for use in urban transport planning (**see fig 8**). The model combined the graph theoretic concept with the markov chain formulation to build node and link probability values. Using these values, the total urban traffic volume is distributed among the nodes and links. This model was tested using the urban road network of Barnsley in England and the result indicated in Table 6 was obtained. The predictive accuracy of the model was tested using Theil's inequality coefficient. The result indicates 80.9 per cent predictive accuracy for node flow and only 14 per cent for link flow. The same model has been used to assess the effect of link improvement on urban traffic flow in Ilorin in order to determine the volume and direction of change in urban traffic network.

Table 6: Actual and Predicted Node and Link Traffic Volume

Node	Node Traffic Volume		Link	Link Traffic Volume	
	Actual	Predicted		Actual	Predicted
A	9163	9329	1	11480	9939
B	18360	18460	2	6120	8261
C	13840	13748	3	14206	9161
D	19907	13062	4	14206	10046
E	12055	9114	5	9905	9986
F	13925	12717	6	8040	8925
G	13741	13389	7	11402	8986
H	13474	18126	8	7354	8486
I	15577	13781	9	6120	8012
J	15974	13394	10	6846	10513
K	13008	13341	11	13000	8646
L	21463	21688	12	11309	9155
M	19486	21701	13	9331	9052
N	13860	12669	14	7354	8483
O	16304	12989	15	9331	8051
P	12256	12286	16	8040	7069
Q	7801	12640	17	8040	7881
R	9195	12401	18	9905	8845
S	23320	24582	19	9905	8671
T	8593	12634	20	12798	8647
U	15401	13127	21	8328	7936
V	14322	12987	22	6595	8716
W	8420	12728	23	8445	6770
X	14606	12555	24	9331	6749
Y	8141	8567	25	8185	7981
Z	9476	12242	26	11309	9001
A1	10314	12554	27	11309	8886
A2	6876	8430	28	8040	7887
A3	15228	12840	29	12762	10029
A4	12762	8812	30	4573	8787
				4573	8721
				7695	8701
				4573	7588
				6595	7551
				5201	8551
				5201	8641
				9407	9660
				5201	8590
				6878	7496
				10819	7569
				10819	8707
				12762	9963
				6876	9840
				6876	9747
				6120	8635
					9610
					7520

Source Ogunsanya 1985

Urban Movement Pattern and Characteristic

Ogunsanya (1981) pursued a novel idea in finding solutions to the urban transport congestion problems when he argued for the consideration of freight vehicles in the total urban traffic. Because cities function as commercial and industrial centres, van, trucks and trailers move large volume of goods in and out of cities on daily basis. These freight vehicles, being different from passenger vehicles, pose different requirements on the transport system in terms of road design, parking needs, loading and unloading facilities, pollution abatement etc. Besides, they cause more congestion problem compared to passenger cars. For example in a study of the contribution of freight vehicles to traffic delay problems in Lagos, Ogunsanya (1983a) observed that although freight vehicles constitute 20.8 per cent of the 20,454 vehicles surveyed, they are responsible for 38.8 per cent of the delay problems. Along Apapa Wharf road, freight vehicles constitute 37.2 per cent of the total traffic but are responsible for 54 per cent of the congestion problems. Table 7 shows that of the 1090 minutes (18.2 hours) lost to delays, freight vehicles account for 14.2 hours or 78.2 per cent of the total time lost. In order to solve these problems he advocated for a freight traffic restraint policy on the short run, and an effective integration of transport and land use planning on the long run.

The understanding of the pattern and characteristic of urban movement is also crucial if we must find lasting solution to the urban transportation problems of Nigeria. Geographers are best placed in providing this understanding since geography is concerned essentially with spatial interaction. Urban land use constitutes the origin and destination of different types of movement. These origins and destinations define the exact pattern of movement, as well as the volume and the spatial dimension of traffic. For the understanding of the present and future

pattern, geographers provide empirical explanation for determining the **why, where, when** and **how** of movement in the urban centres. In a study of the pattern of trip generation in Ile-Ife, Ogunjumo (1986) observed that trip frequencies are affected by household size, number of workers per household and vehicle ownership. Adeniji (1985) also noted that the size and density of settlement, topography, length of journeys, income and household characteristics influence the pattern of urban movement. Empirical studies have also shown that these socio-economic characteristics of commuters do not adequately explain the volume and pattern of movement. Behavioural or attitudinal variables contribute substantially to the explanation of this pattern (Ogunsanya 1988).

Table 7: Time Lost to delays by Causes

	Type of vehicle (Cause)	Delay time	%
A1	Trailers	596	54.68
A2	Tankers	56	5.14
A3	Trucks	80	7.34
A4	Lorries	96	8.81
A5	Delivery vans	4	0.37
A6	Aje-Igboro	4	0.37
A7	Handpushed trucks	16	1.47
B1	Cars	104	9.54
B2	Buses	98	8.99
B3	Danfo	24	2.20
B4	Taxi	12	1.10
		1090	

A1 - A7 = Freight vehicles

B1 - B4 = Passenger vehicles

(Source: Ogunsanya 1983b)

In other related studies Ogunsanya (1982b, 1984a,&b) observed that intra-urban freight flow provides a useful basis for identifying the structure and pattern of traffic flow in cities. He divided Lagos metropolis into fourteen

traffic zones and collected data on the volume of freight shipped into and out of the zones to prepare a 14 x 14 matrix of inter-zone freight flow. The matrix was subjected to the R-mode and Q-mode factor analytic technique to obtain major spatially interrelated freight producing and consuming zones. Within the metropolitan Lagos four major producing and three major consuming regions were identified. A graph –theoretic analysis of the flow matrix further indicates an intra-metropolitan hierarchy of freight zones with Apapa as the first order, Lagos and Ikeja as the second order while Palmgrove, Yaba, Agege, Ijora, Ajegunle, Ikoyi, Maroko, Mushin, Kirikiri and Oshodi are in the third order (see Fig 9).

The flow pattern identified in this way can be used as a convenient basis for planning the urban space economy since the volume, direction, origin, destination and mode of freight movement determine the demand for urban transport facilities. The major freight handling nodes require substantial transport infrastructure and access facilities. There is the need for access and for the provision of parking space, loading and unloading facilities in such freight zones. Besides these parking facilities, the routes to such traffic zones have to be such that can accommodate increasing volume of freight to avoid traffic congestion. This requires phased expansion of access routes for which land reservation has to be made in the master plan of the affected city.

Traffic management and policy issues

In solving the urban transportation problem, traffic management emerges as an option especially in cities where transport infrastructure and facilities are already over-stretched. A variety of these techniques have been used in Nigerian cities.

One of the most effective, but poorly managed techniques is the Lagos Traffic Restraint Policy Edict of 1977. By this, specific categories of vehicles (specified by odd and even vehicle registration number) were allowed to enter Lagos Island at designated times and days of the week. In a preliminary evaluation of this policy, Ogunsanya (1982a) noted that at inception, the method encouraged the car-pool and park and ride system of traffic management. For example, the number of people asking for a ride increased from 20 per cent before the edict to 50 per cent after the edict. The number of people using bus service increased by 70 per cent thereby encouraging an indirect mass transit system. Rather than encourage this new development by providing car parks at the boundary of the restricted areas, and provide mass transit buses to convey commuters to the restricted areas as recommended by Ogunsanya (1982a), government ignored these derivatives of the policy.

In a subsequent detailed study, Ogunsanya (1984d) observed that the car pool and the park and ride system soon ran into problems. There was neither safe parking space for cars nor were there adequate and efficient buses to carry the commuters to and from work, leading the frustrated motorists to devise means of circumventing the edict. For example, the affluent people bought a second car and obtained appropriate even or odd registration number for it. Some families with two cars with odd number, either sold one and bought another with an even number registration, or swapped one with a family with two cars carrying even number. In some extreme cases, people manipulated the single number of their car such that the same car has two numbers, one even; one odd so that the same car could be used daily instead of on alternate days. All these led to the failure of the traffic restraint management technique. Unfortunately, rather than reviewing the policy to make it more effective, government

repealed the edict and the country lost an opportunity of a cheap method of traffic management.

WHAT IS GOVERNMENT DOING?

The major objective of government in urban transportation should centre on how to improve intra-urban accessibility while minimising the negative effects of transport on the environment. In the developed countries, this is a major transport policy goal. Even before the advent of the automobile, the people of London in the 16th Century campaigned vigorously against the heavy cart traffic of brewers in London on the ground that they tore the ground and damaged the road. In 1563, the King of France was petitioned to the effect that all vehicular traffic should be banned from the streets of Paris, while Rome simply banned all wheeled chariots from the streets of the city.

The complaints about the automobile degrading the environment have become very strident today and various efforts are being made to curtail the menace and make the city more liveable. Several powerful lobby groups have emerged that are proffering simple, non-technical but persuasive ways to attenuate the negative effect of transport in urban areas. David Engwicht, a renowned environmentalist, leads two of such groups - Street Reclaimers and Traffic Reduction Treaty Street Movement formed in 1999. In the opinion of these groups, if motorists are collectively responsible for urban traffic problems that disrupt the social and cultural life of the city, urban residents also have a collective responsibility to reclaim their streets from the automobile. The two main objectives of the group are:

1. To reduce their own car use to a minimum and when driving, to act as a guest in other peoples neighbourhood

2. To put their own time, money and resources into psychologically and physically reclaiming the streets for the purpose for which they exist – vibrant mix of homes, workplaces, schools, shops, socialising spaces and cultural facilities.

In pursuing these goals, Engwicht (1992) advocated different methods of street calming, while Alvord (2000) emphasised the need and how to end the love affair we all have with the automobile in his book, *Divorce your Car*. But these are at the individual level. At the level of government, effective mass transit system such as the London Underground which carries over a million people during the peak hour periods has been introduced to reduce traffic congestion and other negative externality effects of transport in the urban centres. Traffic management measures that encourage the use of mass transit vehicles in place of personal cars have also been adopted, making movement in urban centres less difficult.

Apart from these, government in developed countries are advocating various trip-reducing measures. For example, funding research in Information Technology is one of the adopted measures aimed at reducing the frequency of intra-city trips. It is now possible to shop, bank and even get a life partner on-line through the Internet. Currently, several companies are experimenting with a system that enables their employees to work from home through the effective use of computer networking, making them more effective and productive. Apart from saving time spent in traffic, the system takes the car of such employee off the street. Efforts are also being made to improve automobile technology to eliminate pollution from the emission system. Computer software programme are being developed to monitor traffic situation and to solve traffic congestion problems. With the development of electric cars with automatic driver device, it is hoped that in

another 20 years, pollution free vehicles would become commonplace and passengers will just sit down and work while the automatic driver device does the driving. Evidently, such cars will be safer, cheaper, faster and will not generate any pollutant inimical to human existence. Other technologies under plan include flying cars, personal rapid transit, and hyper-soars. The overall objective is to improve urban mobility while minimising the negative effects of the various means of transport. Some of these look like fairy tales, but they are feasible and achievable. It would be recalled that the attempt of the Wright Brothers, to design and fly an aeroplane looked crazy at the onset. But today, their original idea and modest invention have resulted in the building of aircrafts travelling at an average of 900km per hour and the Concorde that flies at supersonic speed.

One major cause of urban transportation problems in Nigeria today is the rapidity with which the country imbibes the transport technology of the more developed countries without paying adequate attention to their regulatory and remedial measures. Today the traffic situation in many Nigerian cities is simply chaotic. The urban roads are congested, and traffic pollution and road traffic accidents are on the increase. We may however, ask what is government doing?

Government's efforts at solving urban transportation problems in the country are *ad hoc*, fragmented and ineffective. The construction of new roads and flyovers, the expansion of existing roads and the decentralisation of offices to reduce centre-oriented movement have not worked. Traffic problems are not solved through these methods as such options normally lead to the generation of more traffic. Two worthwhile efforts that were made are the introduction of the Traffic Restraint Edict of 1977 and the Mass Transit Programme of 1988. Although both had immediate positive impact, they

failed subsequently due to management and policy implementation problems (Ogunsanya 1984d, 1998). Very often, government enacts good policies to solve urban mobility problems, but such policies are either not implemented or are aborted at the slightest difficulty.

In general, the government is very inactive when it comes to urban transportation in Nigeria. Unfortunately, the problem of urban mobility cannot be solved by wholesome privatisation of the transport sub-sector. Government's non-challant attitude is manifested in several ways. Rather than adopt simple solutions to urban congestion problems, it engages in rather sophisticated and unhelpful approaches. For example the congestion and pollution problems of Lagos are aggravated by the unwieldy nature of the public transportation system – the numerous taxis, “*molues*”, “*danfos*”, “*keke Marwa*”, motorcycles, truck-pushers and pedestrians, all struggling selfishly for the right of way. Government knows and has been advised by scholars, planners and international transport consultants that the introduction of higher capacity vehicles and the reorganisation of the numerous small operators will solve the problem to a large extent. Rather than adopting this simple solution, more expensive, but ineffective land use relocation, construction of flyovers and new roads are adopted. While these approaches help to aggravate the transport situation, they have also served to put big smiles on the face of people concerned with the award of road construction contracts, and huge profits into the pockets of road construction companies at the expense of all of us.

Very often government lacks the political will to solve the problem. Between 1902 and 1913, the colonial government operated a tram service with four trains plying Lagos Island and the mainland daily. The service was discontinued in 1913 due to what the government described as shortage of funds.

In 1929, Zarpas & Company ran a reliable and efficient bus transit system. The bus transit system, which served the emerging sprawling city of Lagos, carried an average of 100,000 passengers per day. Lagos Municipal Authority acquired the company in 1958, but it folded up shortly after because of huge losses arising from corruption and mismanagement.

In 1982 the Lagos State government approved the construction of the Lagos metro line, which was designed to carry about 85,000 passengers per hour during peak period and 1 million passengers per day, using 30 trains travelling at a commercial speed of 40 kilometres per hour. The journey from Yaba to Lagos would take 15 minutes while Agege to Lagos would take 40 minutes. Due to bad political judgement, the metro line plan was suspended in 1984 with such flimsy reasons as faulty approach to the pre-contract processing of the design and construction, inflated prices and the absence of federal participation in what was described as an enormous foreign exchange based contract.

By the time the metroline project was revisited in 1987, the price had shut up from N689.45 million to N115.43 billion for the 28.5km stretch of metroline. The metro system was cancelled and the Lagosians in particular and Nigerians in general again lost a beautiful opportunity to benefit from a mass transit system. The Lagos State Government recently concluded that “the metro-line is no longer the answer to the transportation problem of Lagos” and that the light rail system is preferred (Punch, May 30, 2002). The first phase of the work on the light rail to be jointly financed by the World Bank, the private sector and the government is expected to cost \$600 million or N64 billion. From past experience, one can only hope that this does not turn out to be another unattainable project promoted for the sake of political propaganda.

Thirdly, the government for no explainable reasons often fail to execute its policies and study recommendations. In 1977, government introduced the Traffic Restraint Edict which encouraged the car-pool and park and ride system. Although the edict/policy itself had its shortcomings, but rather than address these flaws, the government cancelled the policy outright. A similar situation also applies to the activities of FUMTA. It will be recalled that in 1988, the Federal Urban Mass Transit Agency was created as a way of solving urban mobility problems. But due to certain reasons the policy failed. Rather than ask why, the government just suspended the activities of the Agency. The problem here is that government is often too impatient to allow its own policies to come to fruition and it lacks the political will to go the whole hog of implementing what are often well thought out policies. Mandarins in government often forget that:

A transport policy is not made in a single document or in a single day. It evolves through a series of documents and actions, through decisions and failure to make decisions, over days and months and years. It evolves from participation of many different parties and the Federal, State and Local Government bodies public interest groups and individuals, private providers of transportation services and users.

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The Nigeria government is yet to bring itself to this realism. Today several commissioned studies are conducted and there is lack of willingness to execute the recommendations.

WHAT MUST WE DO?

Mr. Vice Chancellor, distinguished ladies and gentlemen, without any attempt to be immodest, I have participated in quite a number of commissioned transport studies in Nigeria. I participated actively in the drafting of the first National Transport Policy document for Nigeria in 1990 and the Urban Transport Policy initiated by the defunct Federal Urban Mass Transit Agency in 1986. I am also closely connected with the Nigerian Institute of Transport Technology (NITT) Zaria, - that apex Institute for Transport Planning and Management in Nigeria, which I have served in various capacities since 1988. I can therefore say with authority that government is not sincere in its effort to address urban transportation problems in Nigeria. It is important that government pursues a policy goal of improving mobility in urban centres, and eliminating the negative consequences of transport on the urban environment. To this end, it is recommended that:

As an the Immediate Action Plan:

Government should set up a Presidential Advisory Committee to look into the urban transportation problems in Nigeria and suggest immediate action plan that can be adopted to ameliorate the situation in cities where the transport problem has reached a crisis situation.

In the short run, government should:

- (a) conduct a comprehensive study of the urban transportation system and prepare a long term perspective urban transport plan for the cities. The Master Plan for Integrated Transportation Infrastructure prepared for

the Federal Government by Julius Berger *et al* (2002) which was launched in May of this year failed to address the urban transportation system.

(b) introduce and enforce traffic management schemes to reduce traffic congestion problems. Special attention should be paid to:

- traffic restraint techniques
 - bus priority measures
 - user charges techniques
 - parking restraints techniques
 - demand management techniques
- etc.

(c) show serious and sincere commitment to the development of the proposed light rail mass transit system in Lagos. The rail mass transit system should also be developed in Abuja metropolitan area as a way to mitigating existing and future serious traffic problems. In other major cities of Nigeria such as Ibadan, Port Harcourt, Enugu, Kaduna and Kano the existing rail corridors in these cities can also be used to commence a rail mass transit system.

(d) reorganise and equip the Nigerian Institute of Transport Technology Zaria to perform the functions for which it was set up. Special attentions should be given to:

- the Research and Consultancy Department, which should come out with realistic and pragmatic tool formulating and problem-solving research reports in transport, for use by transport planners and operators.

- the establishment of a strong Transport Data Bank that will provide a spatio-temporal data for urban transport planning.

On the Long run, government should:

- (a) embark on a phased programme of metro line development, and the introduction of bus mass transit in its major urban centres especially in Lagos, Abuja, Port Harcourt, Kaduna, Onitsha, Aba and Kano. The future transport situation of these cities will be chaotic without a mass transit system. The sprawl of Abuja and the development of its transportation system are already showing the potentials for serious traffic congestion problems and the traffic situation will be worse than that of Lagos if not properly and promptly addressed.
- (b) formulate and implement firm policies on
 - Urban development and transport
 - City calming and street reclaiming
 - Infrastructure provision especially for pedestrians and cyclists.
 - Urban environmental pollution control
 - Road safety measures and traffic law enforcement
- (c) involve private sector participation in the total transport planning, policy formulation and implementation, and in traffic regulation enforcement in cities.

CONCLUSION

Mr. Vice-Chancellor, distinguished ladies and gentlemen, in concluding my lecture please allow me to share with you two stories. Sometime in March 1990, the Committee set up by the Federal Ministry of Transport had just concluded work on the Draft National Transport Policy document and had decided to honour the foreign consultant with a dinner at Sheraton Hotel Ikeja, Lagos at 8.00 p. m. Staying in Gbagada, I set out for Sheraton Hotel at 7.00 p.m. and arrived there at about 8.30 p.m. The Consultant who was accommodated at the Nigerian Railway VIP Guest House at Ebute-Metta, a distance of about 8km from the hotel set out at about 6.00 p.m. As at 10.00 p. m. when I left Sheraton without dinner, the consultant and the other member of the committee were still trapped in the Surulere traffic. This enabled the consultant, a World Bank expert to experience first hand the problem for which he was supposed to proffer a solution.

On 19th March 2001, I gave a Seminar titled “*Moving the Urban Masses – One Step Forward two Steps Backward*” at the GEOGRAPHY AT GUELPH Seminar Series, in the Department of Geography, University of Guelph, Canada. During the course of my presentation, I showed some slides depicting transport problems involving the common people in Nigerian cities. The first question I was asked after my presentation was on how government intends to solve the environmental pollution problems emanating from the chaotic traffic situation.

It is sad, Mr. Vice Chancellor that what seems important to the people and government of many other countries of the world today does not attract the attention of anybody in Nigeria. In fact, while the developed countries are protecting their urban environment from the negative effects of transport, Nigeria is adopting the automobile

technology without the slightest concern about the associated problems. While Europe and America are conserving their petroleum resources, Nigeria is selling its own recklessly and worse still at the buyers' own price. While the developed countries are introducing emission free vehicles through the use of solar energy, cell operated and electricity powered vehicles, Nigerians are very happy buying the junks excitedly nicknamed "tokunbo", which are abandoned as a result of these polluting effects. But must this continue? Only the government has the answer to this question.

Finally Mr. Vice Chancellor, what I have tried to do in this lecture is to show that just as transport in cities brings a lot of benefits, it also brings along with these benefits some negative effects. Ironically, both transport and cities are irrevocably tied together in a marriage – for better for worse. The objective in the geographical study of urban transportation centres on how to keep this marriage intact by reducing the negative externality effects of transport and thereby make our cities more habitable. If the government feels sufficiently sensitised by the recommendations made in this lecture, then my objective in examining this aspect of transport geography, which has attracted my attention in the past 27 years of academic work at local and international levels would have been achieved.

Mr. Vice Chancellor, distinguished ladies and gentlemen, I thank you very much for listening. God bless you all.

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I give thanks to Almighty God for giving me the knowledge, understanding and good health; and who in His infinite mercy has made me worthy of this exalted position. May He be adored and praised for ever.

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MAKER AND BREAKERS OF CITIES

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