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INTRODUCTION

1. *PRACTICAL AND THEORETICAL INTEREST OF GEOGRAPHY OF THE URBAN TRANSPORT*

It seems apparently that the study of urban transportation plays only a prevailing role in planning of transportation systems. Truly, no doubt is that the answer to the problems coming from the gap between means of transport and facilities or between supply and demand particularly in the rush hours is on of the principal goals of the public administration in large metropolitan areas or of the transit agencies.

In this field we don't impact now with difficulties coming from the technological point of the view. No answsers weakes to the problems of speed or to volumes and weight of transport, nor coming from the pollution of atmosphere doing to the rest of combustion. Perhaps one problem alone is now without practical convincing solution in this field. It is the noise pollution, coming from the sum of all the means of transport rather than from a single vehicle.

Unbeareable difficulties there are not also from this point of view for facilities, neither for the building nor for the exsercice; if ever some problem could come for these means of transport which utilize directly air or water, i.e. planes or boats and ships. In this case the problem is not that coming from the contemporary use of the same *medium,* but the wind or the waves produced by the movement.

If there are not technological difficulties, the urban transport systems know many difficulties coming from the economics. The urban transport is an intensive capital sector not only for the cost of facilities, infrastructures and vehicles, but also because the capacity of supply is adapted to the rush hours size of trafic. From the physical point of view also there are many difficulties doing to the nature of the terrain, phisiography, rivers and so on togheter with bonds produced by phisycal structure of the city (housing, roads, etc.) and by psycological opposition of neighboroods facing new project and development, a resistences of the bureaucracy, of landlord, developers and son on.

It is evident that the solution of the problem of gap between supply and demand in urban transport facilities is very complex: the practical answer of the researches such a problem is of great interest and central in the administration of the modern city. Nevertheless it seems to me also that the theoretical and general study of the urban geography is very useful to help gave an answer to practical problems of urban transport because the relationships we can find between many difficulties of the urban systems of movement and the central place of the mobility in the modern life and society and organisation of polarized and hierarchized of space.

2. *THE GROWING MOBILITY OF THE MODERN CITY*

All the students of the modern city know now the role this spatial structure plays in an organization of the production and of the society based on the interaction, therefore on the circulation and exchange of persons, information and things. In the contemporary life the need of centrality growth not only for the increasing value of the time and for the multiple, more intensive use we can made through the economic and technologic means of the contemporary man. Immensely growth is also in comparation with the past the need of exchanges, coming from an economic of production based on the division of labour and specialization of men activities and of structures, space and all the means of production.

It is a centrality that is in relation finally with the revolution in transport which, through the scientific and technologic progress of physic and chemistry in last centuries, offers to the contemporary life a volume of mechanical energy men never knew when the energy came only from human and animal labour.

Greater is also the need of social integration between men outside travel and economic life, because the increasing part of free time and the quality of life.

To understand the intensity of the relationships in the metropolitan area it is necessary remember that in the last centuries the section of humanity which selects to live in the urban space increased with a large sprawl in the country, but the territory urbanized remains till now a slight portion of the national space of each country. It is in this small part of the national territory that the immensely growing sum of spatial interrelations is became a very dense interlacing of individual and social exchanges, i.e. a demand of mobility, accessibility and transport constitute the itself *raison d'etre* of life of the contemporary society.

From the physical point of view all the spatial interactions become in the city a sum of linkages between two or more points: a space geometry of these

movements changes from the simplest case of the direct journey, as the crow flies, to the case of multiple exchanges which demands a central interceptor. Thus in the cities intersect flows of all kind, from interpersonal flows of two individuals to the move of a great part of young people to a concert that deplaces in the same hour to the same place a mass of people. All these movements utilize partially the same part of the road network, particularly in the centre of the city: in a central street it is impossible distinguish a commuter from a shopper or from a turist or a businessman, particularly if they use all the cars.

3. *FOR A DIVISION OF ALL KIND OF TRAFFIC*

Much of the difficulties which faces the traffic in metropolitan areas creating problems either in the undersystem of infrastructures and in that of transport, comes from this superimposition of such different kind of traffic. In the case of the urban traffic it is not sufficient to separate the different flows utilising different means as aerial or surface infrastructures or trolley from train, ship from car and so on. The urban traffic demands a division based on the specific characteristics of each flows that only in certain cases coincides with a use of a different mean of transport. This need emerges clearly if one thinks for example to the different kind of facilities needs catering retail system or shopping. Another kind of traffic we cannot mix is the neighboroods traffic with the traffic of commuters or of businessmen in the business district, or the touristic traffic in the central city and so on.

In practice it is very difficult to distinguish all these kinds of traffic if don't use different means of transport of different schedule of movement, nevertheless planning of transport and of metropolitan area is interested in know before choose. It is in this sense that the eminent planner Le Corbusier labeled Venice the city of the future: from the planner's point of view the possibility to distinguish the traffic of goods using the network of canals from the traffic of persons using streets and its network is in Venice a sign of modernity we have to diffuse all in the cities.

4. *A FEW USEFULL CLASSIFICATIONS*

For the relationships between planning of transport and the form of the city and the use of the soil, the contribute of geography to the projects of new road or line of traffic or urban network development is very interesting and could became crucial. From the methodological point of the view the relation-

ship between planning of transport and geography seems to be intermediate by the urban planning who geography and particularly geography of urban transport is the immediate antecedent in the sense it faces directly with the problems of the mobility and of the accessibility to the city.

In this sense the best usefull classification could be that emphasizes not only the nature of the move or of the means of transport and/or of infrastructure utilized, but refers also this division to the use of urban soil. In the map of the use of the urban soil it is summarized thus all the origins and destinations of the movement particularly if referred to the metropolitan area which is comprehensive also of the commuters moves.

No doubt that from the scientific point of the view this type of classification asks more detailed division of the city because the differences in size, shape, functions and activities and from the socio-economic point of view, cultural, historical and son on. Very different is the urban frame in Northamerican metropolitan areas and in Europe, where also it is necessary to distinguish the Meditterranean city from the Western city or the newer from the older.

Nevertheless it is a first classification which could be adapted to the different cases in a deeper typology distinguishing at least Northamerican cities from those of Europe and of the Third World. It comprises:

a) a division between the traffic arriving or leaving the city from the traffic moving through the metropolitan or urban area after (or before) the arrival in the railway central station or in the airport and so on;
b) a division between the greater arteries catering the long-distance traffic or the principal flows of traffic (now in many cases in American and also in European cities this is the network of freeways or *rocades*) from the minor viability for a deeper penetration or the internal circulation in the urban area and/or in the neighboroods;
c) a division between the central city (partially in coincidence with the American CBD, the English city and so on) from the american suburbs or the european periphery and from the area of the scattered urbanization, that can be inclused or not in the metropolitan area in relation with the trend of development and the boundaries of the commuter's move to the central city.

5. *THE DIFFERENCES BETWEEN EUROPEAN AND AMERICAN CITIES*

The most critic division is the latter classification of the urban space because the great differences distinguish the inner-city in metropolitan area of

older civilization and culture countries and in the newer, overall United States and Canada. In this part of the World, where the fenomenon received perhaps the most important attention from the point of view we are interesting, during the sixsties was deepened the concept of Central Business District, with particular reference for the retail activity. Time by time, this conceptualisation received some important adaptation, beginning from the awareness that, during and after the great development of suburbs and the building of freeways, uniqueness and indivisibility of centrality of CBD is became unbelievable. The place of this kind of centrality is now occupied by many suburban centers, particularly on the crossing between freeways and the outside rings. Now for most metropolitan areas of Northamerica we must talk of polycentric structure facing an inner-city sometimes declining.

Very different is the case of European cities where the division between a central city prevailingly commercial and productive and housing areas is less clean. Often people and housing we can find in the inner city and even in the CBD. Overall it is impossible find around the central city a frame of older and crumbling housing inhabited by ethnic minorities and lower-income people.

In European cities we find a greater mixture in the uses of soil between housing and economic and from the socio-economic point of view it is often very difficult distinguish between the different parts of the population, in relation also with the ancien distribution of inhabitants. Theremore in European cities the mobility into the urban area and between the different neighboroods is less fast that in American cities and the realtionship with housing is intermediate by the historical heritage. In Europe we cannot ignore when studying the central city the relevant weight of the historical centres, with their monuments and symbols.

Moreover, in American cities also the conceptualisation of CBD is ceding and leaving the place to the inner-city concept where is concentrated not only a particular part of retail activities, but also those office industries growing greatly in our times, after the transfer of many industrial plants outside the compact city and perhaps the metropolitan area itself.

6. *THE NEW MEANING OF CENTRALITY AFTER GOTTMANN'S STUDIES*

Even if the division between central city, residential areas and open space outside compact city is very imprecise and needs for many detailed inputs case by case, it comes again useful with reference with urban transport because the increasing division of the use of soil in parallel with the progress of the organisation of space coming from the post-industrial era.

It is again Jean Gottmann, the major scholar of the development of the modern urbanization in the developed World, which dictates the list of the factors that explains the newer role of the centrality of the contemporary city and often occupies the place where the accessibility is till now greater, the central part of the metropolitan area. These activities are called transactional activities or abstract transactions. The factors support transactions are in partially corresponding with the relative activities:

a) accessibility
b) information flows
c) transactional performance (work environment)
d) labour market
e) entertainment and spectator sports
f) expert consultation
g) money and credit market
h) high-order shopping facilities
i) educational opportunities.

"Operating togheter in synergistic fashion — writes T.A. Hartshorn referring the Gottmann's thought — these nine interwoven factors give the downtown its primacy as an employment center", because most of this activity needs those factors and occurs in office buildings as true office-industries or "central" activities.

It is this centrality that explains the most important flows of commuters into the city and the metropolitan area even after the decentralisation of the CBD, based on the migration of the people in *suburbs* and the growing diffusion of the private automobile; even after the development of the freeways or the reinforcement of the most important radial roads and finally after the building of the outside rings and the industrial delocalisation.

It is this centrality that explains the most important flows of customers and users of services and the catering of the same functions in goods and by-products.

It is finally this centrality that explains the important flows of transport (and communication) linking each function all to the others locate in the same or in other parts of the metropolitan area.

If we consider then the part of the metropolitan area outside the inner-city, i.e. not only the periphery of the compact city but also the scattered part, it is the place of the change as many as the central city. It is an obvious awareness with regard with the phenomenon of the sprawl of the urbanization and with the delocalisation of the activities and of the CBD. But we meet also

with a few qualitative changes in relation with the tendency of the urban centrality to find new places where the less geometrically central position is compensated by the gains that one can do in time, costs, facilities and so on.

7. *THE DYNAMIC OF URBAN TRANSPORT GEOGRAPHY AND THE DYNAMIC OF URBAN GEOGRAPHY*

A first manner to survey the usefull of this division of urban space could be extract. I think, by the nine essays we present here following. The problems they faced don't exhausts certainly all the topics of the urban transport geography in relation with urban geography. Moreover they refer to most various situations in cities either of Northern America and older Europe or of the Third Worl (the case of South Africa). Nevertheless, the conclusions we could achieve in relation with the dynamic of the central city and the centrality, with the dynamic of outside city and the peripherisation of many activities, finally with changes affecting the relationships between new center and periphery and new centrality and peripherisation explain from my point of view the benefit of this classification of the city. In this sense we think usefull to group the nine essays in a few cluster referred to the division of the city in some parts and problems of center and centrality and in some parts and problems of periphery and peripherisation.

We will analize in the following sections the essays on Warsaw and Prague (central city); those of Chicago, of Groningen, Zwolle (Netherlands) and of the suburban America (relationship between center and periphery); finally those of Paris and of the european cities facing a new structure for transport in the periphery of greater cities.

8. *THE REBULDING OF THE HISTORIC CITY: THE CASE OF WARSAW*

The case of Warsaw introduced by Professor T. Lijewski of the Polish Academy of Sciences is doubly intersting. It is firstly the case of a greater European city of old origin (and capital of the Sate also): but it is also a case of a city destroyed during the Second World War and totally rebuilded after the War in the historical part.

It was an occasion difficult to repet from the point of view of the urban transport, because in the older towns of Europe the historical part of the city represents always a very strong factor of inertness in developing the transport system because hard ties becoming from the network of streets of the old

town. A solution of the change of inner traffic in pedestrian flows is a very frequent solution from the point of view of conservation. But not always is a complete solution, particularly when the historical part of the city is very extensive and we need of other forms of traffic and transport.

As outlined by the Autor, the rebuilding of historical Warsaw was widely utilized for modifying standard of housing, to obtein apartments more idoneous to the modern expectations. A division between streets based on the different importance for the traffic was adopted with close of accessibility of many secondary streets to the principal network. Many was also the streets in which only the pedestrian traffic was assented. But, after the rebuilding of the historical centre, the space for parking it is not sufficient and overall the general accessibility of the center is not yet achieved because the break of development of underground facing some physical difficulties of the soil (1).

Worse is the situation of urban transport in the surrounding business district where, if the network of streets is more extended and regular, the volume of traffic is very intensive for the concentration of offices, based on new economic and geographic patterns of the production in the after War.

The conclusion is that Warsaw cannot regarded as an example of well being planning of urban viability and transport in a rebuilding of the city worried to restore the ancient features of the historical centre and to improve standards of housing. As frequent, the size of funds for traffic and transport was weaking and the forecast also of the trend of development. But the major weakness is, from the methodological point of the view, the relationship between urban and urban transport planning which was often marginally.

9. *THE UNDERGROUND IN THE CITIES OF THE EAST EUROPE: THE CASE OF PRAGUE*

The case presented by Professor J. Hursky of the Czechoslovak Academy of Science is referred to the undergrond of Prague, another great city of the old Europa where the feature of its important history is well printed in monuments. It belong also as Warsaw, to the socialist World, where the economic is centrally planned, the public transit is preferred to the private one and the private entreprise plays only a marginal role in the housing development.

(1) The Autor don't says if the work is now finished. If we assent with the notice of the contribute of Professor Hursky the underground of Warsaw was underway in 1983.

With 27 km of lenght and 32 stops, that will become 54 km and 57 stops before the end of the century, the survey of geographical and technological patterns of the underground of Prague covers a great scientific weight, because it is one of the four network of underground was built in the after War in Eastern Europe, if we exclude that one of Moscow. The Prague underground particularly, nevertheless projected in 1926, started with works in fifthies and continued during the historical centre of the city and the sourthern part, interested by the greatest demographic, housing and urban development.

A truly underground, conceived as a complete network of railway, with three lines drawing in the central city a triangle between the Museum, Mustek and Sokolovska, open to the five principal directions leaving Prague and crossing the river in three points, started only in later sixsties, when the system was built with the collaboration of Soviet technicians and the rolling-stock coming from the plant of Minsk in URSS.

Thus the underground of Prague, open'in 1974, is the second underground of the Eastern Europe after that of Budapest (opened in 1970) but before those of Bucarest (opened in 1980) and of Warsaw that was underway in 1983.

Interesting is, in the report of Prof. Hursky, the comparison with the similar underground of Wien-Vienna, which must overcome the competion with the privat transport by cars, very intensive in the Austrian capital. All indexes are best in the Prague underground, with exception of those of electrification, of distance between stops, of space for each passenger which exspress the weight the private competition plays in two cities.

This of the relationship between private and public transport in the urban geography of transport in the greater contemporary metropolitan areas is a theme who Prof. Hursky survey enphasises the weight and urges to deepen, if we can compare the underground of the four great capitals of the Eastern Europe with reference either with the urban shape of such historical cities and with the centrally oriented planning.

10. *DYNAMIC OF TRANSIT AND SOCIAL SPECIALIZATION OF URBAN SPACE: THE CASE OF CHICAGO*

With the contribution of Professor Frederick Blum of the Chicago State University we pass from the Eastern Europe to one of greatest metropolitan areas of United States, the one of Chicago who transit system become public after 1947, enlarged in 1974 to comprise also the transit of the metropolitan area (Regional Transportation Authority) and receives funds and is regulated by Federal Acts (Housing Act, 1961, Mass Transportation Act 1974).

The interest of this research is a demonstration that a transfer of greatest part of funds to commuter's transit and Railway System became a decreasing of funds for transit in the City of Chicago, during the period of diminishing funds for transit after 1981.

The careful survey of Dr. Blum concludes that the priority given to the transit between suburbs and CBD of Chicago finished to change the transit system of greater metropolitan area of Chicago in a "high cost transit system", as demonstrates the comparison between the three unitary costs of transport:

Chicago Transit Authority (CTA)	US Dollars	0.79
Commuter Railroad (R.R.)	" "	3.71
Suburban Bus	" "	1.53

Equally interesting are the cosiderations emerge from the survey of this case particularly for the relationship between systems of transport and demographic and socio-economic features of the different parts of metropolitan area of Chicago. Nevertheless the reccomandations that new lines of transport will be created only where demographic density was of 3.000 inhabitants and more per square mile, the decrease of lines realized in the *city* regarded areas where the density was of 27 thousand inhabitants per square mile (while the average of density in the *city* is of 14.000). In the suburbs on the contrary, where the average density is of 2.000 inhabitants per square miles, no any line of transport would be created in this part of the metropolitan area. Moreover, the decrease of lines of the *city* of Chicago interested neighboroods where the trend of motorisation was lowest and the per-capita income also; higest the level of poverty and more important the minorities, particularly of blacks and hispanic spoken.

The contribution of Dr. Blum don't cater sufficient information to analize deeper the reasons of this policy: he observes that the cut policy in the central city and the increase policy in the number of lines of commuters transit from suburbs coincides with the passing of the Chicago Transit Authority to the Regional Transportation Authority and with the change in composition of the Board of Directors, passing from 5 representatives of the City and 4 suburb to 5 and 8 respectively.

11. *THREE STUDIES ON THE COMMUTER'S MOVEMENT*

It is a policy directed to promote the delocalisation of people in suburbs and perhaps the rehabilitation of the central city or it is a policy reflecting the situation of the major increase of people in suburbs? It is a policy that, in coincidence with the decrease of the federal funds for transport, carries a change in the transit systems to increase transport in areas where these are relatively less represented? Or it is a policy in favour of middle class that neglects or strikes poorer and minorities? We cannot answer to these questions, but the essay of Dr. Blum is important for enphatizes the problem of reports between suburbs and central-city in American metropolitan areas. To the same theme are dedicated also the three essays following: the essay of Dr. ter Brugge on the commuters traffic in Groningen and Zwolle in Netherlands; the essay of Dr. Baerwald on the ridesharing in American cities and finally the essay of Dr. Stern facing the case of paratransit and pirate transport in South Africa commuters movement.

12. *THE WORK-TRIPS ANALIZED BY POST-CODES: THE CASE OF GRONINGEN AND ZWOLLE IN NETHERLAND*

The paper of Dr. ter Brugge of the University of Groningen is a synthesis of a greater research made in two Netherland cities of Groningen and Zwolle on the work-trips by information on the residence of workers and white collars of some industries and wholesaling and retail activities. The collect of information was conducted by questionnaires and interviews. The industries were located or in the central city, or in an area of 500 m of radius around the railway central station, or in two of the most recent industrial areas on the fringe of the compact city, belong two of the most important direction of development.

More than 70% of the interviewed activities answered to the questionnaires on the residences of their workers thus offering a possibility to locate information about 6246 employers of 48 plants of Groningen (8% of the total labour forces) and about 4204 employers of 55 plants of Zwolle (11,8% of the total labour forces of the city).

With the help of a computer Dr ter Brugge calculated throught a programm Pendel first the gravity points of each such areas of workers as inhabitants and the coordinates of places of industries and other activities; then the shortest distances and the travel time based on an estimate of the crossing speed during rush hours.

The results were that in the medium-sized towns (50 — 250.000 inhabi-

tants) of the Randstat Holland, with an ancient central nucleus, sometimes historical, and a good accessibility by road and railway systems, more than 50% of employers lives into an area of 5 km of radius from the same points. In the fringes of the urban area, i.e. over 35 km, lives only 4,2 and 5% of the sum of employers examined.

No interest there are here for the part of the research Dr ter Brugge dedicated to the socio-economic features of the areas of post-code from who come the workers and white collars of the interviewed activities because it is a survey on the choose of the place of the residence. Rather will be interesting enphazise the increase of the average distance and time spent for the work-trips coming from the forthees and fifthees and our times. "Suburbanisation — said Dr. ter Brugge — was made possible by a higher motorisation".

13. *CARPOOLS AND VANPOOLS IN THE AMERICAN METROPOLITAN AREAS*

With the survey of the work trip we enter in one of the most important field of relationships between shape, urban development and networks and systems of transport. Dr. ter Brugge calculates that the trips of this categorie are about 20% of all movement and a quarter if we compute with passenger/kilometer index. The increase of the energy costs coming from the high of oil and products prices enlightened much problems related with commuters trips, i.e. with the division between residences and working places, the sprawl of the city trought the process of suburbanisation: congestion in rush hours for example, the weakness of parking areas, the increasing of costs and of time spent for the trade and so on.

In United States where the private transport is the most important system of commuters movement, the answer was attempt to find intermediate kind of transport between individual and collective, and/or private/public transport. It is the argument of the paper of Thomas Baerwald, head of the Department of Geography of the Museum of Science of Minnesota in St. Paul, which in a contribute serveys first results of this new attempt. We must remember, notes Dr. Baerwald, that 97% of all individual trips by cars interest only one person (average vehicle occupancies varies from 1,2 persons per vehicle trip for commutes between home and work to 2,1 persons for all forms of social and recreational travel, to 2,8 persons for vacation travel).

With difficulty the emergence of increasing problems as the increase of oil costs, the congestion and the pollution could find in US urban system an answer in new transit lines because the high costs of building in relation with

the scattered population of suburbs. One attempt to solve the problem was that of carpools and vanpools, with the use of a car or a van for some commuters (generally one dizaine of persons) of the same neighborood to the same district of activity.

The information about the diffusion of the new systems of transport don't are too large: Dr. Baerwald refers that a survey on 21 metropolitan areas in 1975 extimated a number of commutes using carpools or vanpools varying from 14 in San Francisco-Oakland to 27% in Newport New-Hampton, Virginia.

All in the Country, for the 1980 Census, 19,7% of commutes uses some kind of pool comparing with 64,4% that prefers trade alone and with 6,4% that uses transit. It is also possible to know that the federal program 1974-1975 for the development of those transport means in 96 metropolitan areas of US increased of 2,8% the number of commutes using this type of transport, facing one expense of 14,4 million dollars, while a similar program for the development of transit with 1,5 billion dollars of expenses found in 1975 that the number of commutes using htis kind of transport was 6,9%.

14. — PARATRANSIT IN SOUTHERN AFRICA: THE PIRATE TRANSPORTATIONS IN THIRD WORLD

Thomas Baerwald thinking is that the solution of car and vanpools cannnot increase greatly nevertheless efforts of many local administrations and authorities; of many companies worried to gain on transport costs of employers and on parking costs; of many intermediate agencies; finally of the planners that consider as again on new investments every increase in the average of passengers commutes carried by one vehicle. The obstacles don't weakness, coming from the need of a minimum market of commutes with the same schedule and directed to the same work-places, to the difficulties of lack of privacy during the trip, the decrease of use the car during the working time and son on.

But the problem exists and receives the same answer, perhaps with different behaviors, in many Countries of the Third World, where to the lack of private cars or to the weakness of public transit it is answered with the supply of private paratransit: or pirate transportation, that is a kind of employement and income in economies till now largely based on personal services.

The case is analized by Dr. E. Stern of the University of Beer-Sheva with the survey of paratransit and pirate transportation along journeis between ten black states of Transkei, Bophuthatswana, Venda, Ciskei, Kwazulu, Qwaqwa,

Lebowa, Gazankulu, Kangwane and Kwandebele to the working markets of the white urban areas of the Southern Africa.

Nevertheless the weak of information, it is common thinking that this kind of transport (min-vans, mini-bus, taxis etc.) — said Dr Stern — is utilized by 30% of daily work trips in Malesia, by 25% in Indonesia and generally covers about a third in the Third World. In Southern Africa the important development of the phenomenon is in relationship with the strong increase of the number of commuters coming firstly from the born of six self-governing national states and of four independent black states; secondly from the repatriation in these states of part of people living before in other landhomes of Southern Africa; finally from the increase of the whole black population of the ten states which was in seventhies of 66%.

Of course, as soon as we enter in details, the paratransit of Third World shows at once the deeper difference facing carpools and vanpools of the paper of Dr. Baerwald. Two systems have in common that it is a kind of transport intermediate between private and public transport, which utilizes vehicles for 8 - 10 passengers with a service door-to-door, based on the high flexibility of the transport on road.

But in the Third World (and the Southern Africa paratransit and pirate transportation refer to work trips of black people from the black Countries to the white cities) this kind of transport is higly illegal and speculative, competing with public transit nevertheless the very bad conditions of transport. It is frequent that the number of passenger is double facing the legal rule for the car or the van use. But the frquency, the speed and the journey of paratransit and pirate transportation have a very high degree of elasticity, similar to that of taxis, but with a prices that is cheap even for the lower-income commutes of the Southern Africa.

Nevertheless the double number of passengers, the frequency of trips, the long lenght of vehicles, the evade of taxes and public contribution, lower cost of driver, weakness of maintenance etc permit high rent so that this activity become an speculative activity of increasing interest. In the Southern Africa where the movement of paratransit is extimated of 15% of all work trips the number of drivers could be, said Dr. Stern, about of 40 thousand.

15. — *THE NEW LOGIC OF TRANSPORT IN THE PERIPHERY OF GREATER CITIES AFTER THE DELOCALISATION OF ACTIVITIES: THE CASE OF GREATER PARIS*

The biggest difference between the American and the African case is truly in the urban areas outside the central cities, because in American case the

work-trip lies the suburbs to the central city or to the working places in the metropolitan area, whereas in Southern Africa case the work trip is between the state and the cities of the black community and the working places located in the white cities. As demonstrate Dr. Stern paper, paratransit and pirate transportation in Southern Africa rises as temporary transport in rural areas and only successive becames urban transport, in relation also with the increase of the trend of urbanisation. But the process of sprawl of urban population is also very different in Third World Countries. Whereas in United States the sprawl of city is linkened to the transfer of people, particularly the middle class, in suburbs, outside the central city, in the case analysed by Dr. Stern, the greater urban increase refers to the black cities, while the work trip is directed to the prevailing white cities of Durban, Pretoria, Pietermaritburg, East London, Pietersburg, Newcastle, Rustenberg, Bloemfontein.

The phenomenon seems thus in relationship either with the shape urban increase and sprawl assume in different countries facing the economic and cultural differences, and with the dynamic of the territorial location of activities i.e. of labour-forces market.

In this sense it is very usefull the contribute of Prof. R. Caralp of the University of Amiens that studies in the Greater Paris the delocation of activities in relationship with the dynamic of transport and traffic. Few information are enough to illustre this spawl of activities in peripheral areas around the compact built area of Paris. Now there are in activity or in development 154 economic districts (*zones d'activités économiques*) except the 4 located in Paris. It is a complex of more than 6600 hectares, from who about 2500 (37%) are located into "new towns", a bit more than 1500 (24%) in the next periphery and about 2600 (39%) in the greater crown.

This explains the intensity of work trips and a general important mobility of the region Ile-de-France. For the information of Prof. Caralp, there are in the inner western periphery 400 thousand places of work with about 65 thousand commuters coming daily from Paris, 28 thousand from the northern inner periphery, 75 thousand coming from the outside periphery and 20 thousand from the rest of the same region Ile-de-France.

In the southern internal periphery also, with more than 300 thousand employers, there are an important pole of attraction. It promotes a daily work trips of 42 thousand commuters coming from Paris, 53 from Southern zone and 26 form the outside zone.

In the North, the concentration of work places (number of employers) is 217 thousand. The work daily trips are 74 thousand, divided in two nearly equal parts between those coming from Paris and from the northern ouside periphery.

Finally, the eastern interior area collects nearly 230 thousand employers with a working trip movement of 46 thousand coming from eastern outside periphery and of 32 thousand from Paris.

If we stay to alone movement of the periphery, all the traffic is estimated of about 10 million of trip, from who the private automobile movement is of 66% that is 64% of all the mobility of the region Ile-de-France.

16. *A NEW GOODS TRANSPORT STRUCTURE ON THE PERIPHERY OF GREATER CITIES*

In this situation, said Prof. Caralp, the old system of radial transport coming and arriving to Paris shows all its weakness, nevertheless the attempt to improve the railway system, the underground system, the parking areas system to solve new problems of such increasing periphery. The solution is, thinks Madame Caralp, only in the transit (the newer four *rocades* foreseen for the Greater Paris) even if it is till now evident that:

a) each new work in the field of transport needs to be situate in the planning of transit at departamental scale (it is the region Ile-de-France);
b) the solution of the public transit asks for an integration with some kind of paratransit as the gathering (*ramassage*) of scholars or workers or asking and so on, because it is very difficult to modifie a system of distribution based on the private vehicle transport.

Perhaps it will be necessary to think to some types of permit of location for industries and other activities based on a choice of a place near the public transit.

In sum, as seems from the analysis of Prof. Caralp on the Greater Paris periphery and from the analysis of Dr. Baerwald on the suburbs of the urban America, it is this outside frame, coming from the border of the compact inner city to the boundaries of the metropolitan area and further also, that represents the new frontier of the urbanization of our time.

With reference for the innovation coming from the building in this frontier of the structure for the transport of goods it is the theme of the paper of Prof. Wolkowitsch of the University of Marseille-Aix en Provence dedicated to the new complex of road transportation (*les complexes de transports terrestres*). This new structure of transport on the periphery of cities is born as a need to offer specialized structures for the transfer of goods from the big trucks suitable for the long lenght to more agile vehicles suitable for the urban and

metropolitan areas. Around this first function come then a great number of such services related not only to the transfer and to the travel but also to the exchange and to the commerce.

There are now three types of this new structure for transport. Firstly there are the simplest centres for road-services, catering truck's drivers as oil services station, reparation centres and so on. The only difference in this case with the same cars services stations is the specialisation for trucks and the possibility to transfer the goods from one to another mean of transport. There are then special spaces reserved to the international operations near the frontier passages. Finally there are the new transport complexes (as harbours of surface traffic of goods) with all tipes of services connected with traffic and transfer not only from the technological point of view but also from the economic and even financial point of view.

17. *THE LOCATION OF TRANSPORT COMPLEXES*

The best location for this type of new structure into the greater metropolitan areas; from those places that on the convergence point between the highway countries system and the freeway urban system lies on the most important traffic directions.

From the planners point of view, it is a structure between transport and urban planning. We can till now made some considerations on these new traffic structures connected with the though we discussed below. Because the novelty of the structure born generally in seventhies, the choice of the location is nearly everytime conditioned by the previous patterns of the urban and/or metropolitan space, beginning from the network of freeways and roads.

It is also a service complex that can incide in the economic structure of the city producing at least an employement increase.

But the most significative results is for the effects on the urban traffic that lost in this manner all the negative consequences (congestion, pollution etc.) of the truck transport of big size. The firm belief of Professor Wolkowitsch is that within the end of the century the building of these complexes will became necessary and obligatory all to the cities and metropolitan areas. Perhaps in the little and medium sized cities the new structure can induce a transfert of some activities from the central cities with a certain decrease of employments in this part of the city. But in the greater cities and metropolitan areas it could be considered only as a step in the process of transfer of the urban centrality from the geometrical centre to the geometrical periphery.

18. — *SOME CONCLUSIONS ON THE BIGGEST PROBLEM OF THE PLANNING OF THE URBAN TRANSPORT IN RELATION WITH THE URBAN GEOGRAPHY*

It is possible deduce some conclusions from this fast survey of the various and differentes features of the relationships between the geography of urban transport and the urban geography?

With reference for contents, the great disprity of below examined cases and the methodological casuality of the approach coming from essays of very different methods and aims don't permit to deepen our conclusions overpassing general and introductory conclusions. The relation between transport and urban shaper is much more complex those we have foresee throught the simple survey of the relation between accessibility, value and use of soil, conceptualized by the model of Alonso and improved then by other students.

Truly, the geographical dynamic interesting all the greater metropolitan areas revels that, because the search of solution for the difficulties coming from the excessive concentration of activities and traffic in the center of the city, it is developing a partial but increasing process of delocalisation of "central" offices to locations less central from the geometrical point of view, but with a great advantages of the central city.

Thus, not only in United States, a process started of delocalisation of functions once characteristic of CBD and today localised in places of the same accessibility value on the crossing between the freeways leaving radially the city and the outside rings.

Open by the retail activities, the process interested then the office-industry, certain entertainement functions (i.e. sportgames for example), certain administrative and political activities (i.e. the case overall of the capital functions transferred in medium sized cities contiguous to the greater urban poles of the states and, of course, not only for reasons of space); finally certain activities in the formative process, i.e. great univerisities, research centres and so on. This solution creates also, of course, some problems of various nature, coming from those of the crisis of the olden urban centres to those of the space consumption that brings the scattered location of centres and nucleus.

Nevertheless that is not the only difficulty of the urban, services and transport planning. If the delocalisation of the central functions partially into the metropolitan areas diminished the definite division between economic and residential uses of space, the commuters movement — as examined below — is till now one of the most conspicuous and meaningfull flows of the urban system, with effects falling on the transport and on the housing systems.

Moreover neither the development of new towns (*villes nouvelles*) nor the

scattered location of activities (as show the paper of Prof. Caralp) are a solution to the difficulties coming from the excessive specialization of the space, particularly in time of crisis of oil and energy, of deep transformation of economic, of ecological wovies and increasing weackness of urban soils. A few writers also begin to doubt of the advantages of the electronic and informatic revolution. As told Professor Gottmann the results we can espect from the introduction in the urban life of new technoligies depend from the use we can and must do. The case of thelephone in this sense is very enlighting.

I don't think we must emhpatize the advantages of a tigher coordination between urban and transport planning: nevertheless urban planners are more interested in the zoning and transport planners are less interested in the relationships with town planning, the convenience of a tigher collaboration between the two types of specialists don't asks further demonstration. By definition, contemporary city is a kingdom of mobility and accessibility, we must learn to live togheter with the space of privacy, with the need of roots of men asking easly controlled spaces and known and restrict unchanged situation, with finally defended and protected spaces for weakest men, i.e. children, ederlyes, poorer and ills.

To answer this need of reconcile this dilemma more and more become the challenge of the modern man. Truly no problem of life in contemporary city will be resolved by urban and transport planners until solution will be found to the compatibility between opening and permeability of today world, who city is the most effective expression, and those needs of closing and safety that seem a deeper and permanent research of human identity from the urban inhabitants of our time.