

SZABOLCS SZABÓ

**EXAMINATION POSSIBILITIES OF
SOCIAL TRANSPORT GEOGRAPHY IN HUNGARY**

MAIN FINDINGS OF THE DOCTORAL (PhD) THESIS

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I. INTRODUCTION

Transport ensures connections within the country and between different countries, regions or continents, therefore it is an important activity both in social and economic sense. From the aspect of economy its main role is the support of the operation of single national economies, as well as the sustaining of their relations, while from a social point of view the undisturbed attendance of the increasingly growing mobility.

Concerning personal transport, travelling between home and the workplace plays extraordinary role, but ever larger significance can be connected to travel due to leisure, cultural or touristical reasons. From all it comes that transport has an accentuated role in shaping economic systems of production, in accessibility of settlements with central functions (and of goods and services), and last of all in shaping our quality of life.

In the mirror of this it is not surprising that transport is a field of research affected by many disciplines such as e.g. transport science, technical sciences, environmental protection, history, sociology, economic sciences, demography, mathematics, psychology, geography etc.

As main task of classic transport geography the examination of spatiality of transport networks can be assigned, mostly with examinations of networks and nodes, as well as spatiality of demands and supplies (Haggett, P 2006; Hoyle, B. – Knowles, R. 1998; Black, W. R. 2003). In addition one can usually meet in the international literature – in terms of the recently widely diffused synthesising approach – such new aspects (sustainability, problems of metropolitan transport, effects of privatisation and deregulation etc.), which make it possible to develop absolutely modern system of standpoints for the research (e.g. Hoyle, B. – Knowles, R. 1998; Black, W. R., Hanson, S. – Giuliano; G. 2004).

II. EXPLANATION OF SOCIAL TRANSPORT GEOGRAPHY

Social geography within the science of geography can be characterised by specific experimental system of standpoints and methodology (Berényi I. 1997, 2003). Transport (as a basic function of social geography – Partzsch, D. 1964) is playing an accentuated role also in this discipline, since it ensures connection between single basic functions. As a matter of fact also the wording of social transport geography is originated from here, as a subdiscipline part of social geography dealing with transport questions, more precisely with spatial mobility and transport habits of people or groups (Berényi I. 1997).

Studies and articles found in the literature mostly do not use the phrase of social transport geography; accordingly as a matter of fact they can be qualified as dealing with this discipline subjective way regarding their content (some exeptions: Muller, P. O. 1976; Taylor,

Z. 1980; Tiner T. 1986). Its development is originated from the 1960s, when beside the formerly emerged quantitative geography's methods of statistics (e.g. gravity model, graph method, factor analysis, linear programming) also the qualitative methods of describing transport behaviours, vehicle choice, spatial mobility and analysing of route habits have been emerged (Taylor, Z. 1980). The reason of it is primarily originated from that quantitative methods of analysing networks and nodes described however well the state of transport systems at the time of the data collection, but gave not always explanation on the observed features (their evolution and background), nor could forecast the effects of future changes exactly. Obviously it is henceforward essential for supporting examinations of social transport geography to examine transport networks, and their most important notions of the degree of supply and accessibility, and to analyse (regional) statistical data. Based on these "classic" methods it is possible to analyse how people use space (Dürr, H. 1972). In connection with buying and using of different goods it is possible to examine the route and vehicle choice of certain social groups.

Naturally the aims and methods of research – as by all existing and developing disciplines – were continuously been modified in the last four decades. The examination of the choosing of the means of transport, the frequency of spatial mobility and the time spent on transport were come to the front (Nutely, S. 2005; Nutely, S. – Thomas, C. 1992; De Vasconcellos, E. A. 2005; Davison, L. J. - Knowles, R. D. 2006; Limtanakool, N. et al. 2006). Within it the examination of the accessibility of services guaranteed by the welfare state (health services, social supplies, cultural services etc.), as well as the examination of spatial activities of those using them can also get an accentuated importance (Rodrigue, J. P. 2006; Black, W. R. 2001).

The phrase of social transport geography was used firstly by Muller, P. O. (1976), who defined it as a discipline dealing with transport habits and problems of social groups (like urban poor, urban blacks, elderly population, other urban groups, rural population etc.)

In last decades many examination aspects and methods evolved in connection with the discipline. Similarly to social groups it is also possible to examine special transport habits of different age groups or sexes (Black, W. R. 1990, 1992, 2001, 2003; Dobs, L. 2005; Lau, J. C. Y. 2006), as well as coping behaviour associated with vehicle choice (Jensen, M. 1999), or even social conflicts in connection with transport (e.g. problems of metropolitan transport, effects of eliminating secondary lines - Erdósi F. 1985; Hanson, S. – Giuliano; G. 2004; Taylor, Z. 2003, 2006; Vincze T. 2005). As new aspects of examination the evaluation of the connection between transport behaviour (the choosing of means) and life quality got in the

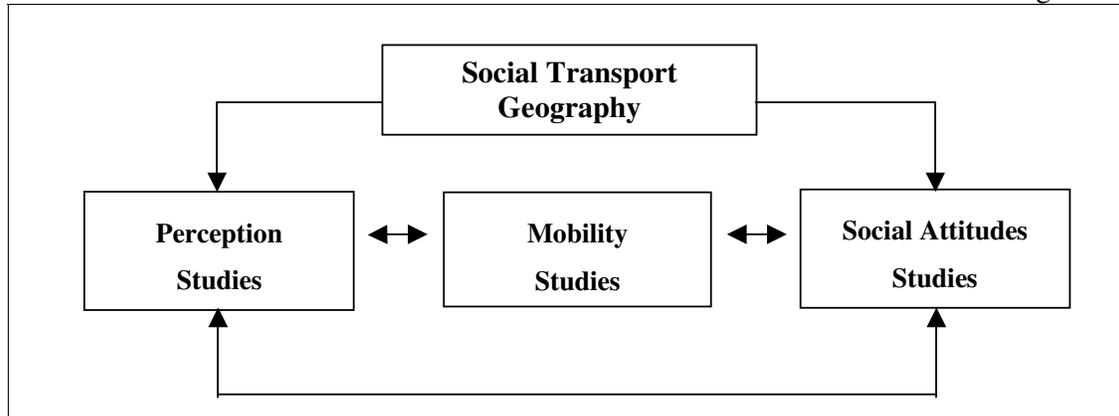
front, which make it possible to analyse the formation of exclusion and the isolated communities (see regions of small villages (Hiscock, R et al. 2002), as well as to examine sustainable transportation (e.g. Beatlay, T. 1995; OECD 1996; Steg, L. – Sievers I. 2000; Gudmundson, H. 2001; Poortinga, W. et al. 2004; Steg, L. – Gifford, R. 2005; Himanen, V. et al. 2005; Black, W. R. 1996, 1998, 2000, 2003; and in the Hungarian literature Erdősi F. 2000; Fleischer T. 2003, 2004; Tóth L. 2004; Koren Cs. 2005). In connection with this contemplation mostly problems of urban transport is examined, namely the evolution of sustainable transport systems (serving needs of local people) is discoursed.

In the Hungarian literature the examination of transport behaviour was primarily the field of the transport planning engineers in the last decades (mainly connected to Közlekedés Kft, Transman Kft, KTI, UVATERV and Széchenyi István College). Beyond traditional traffic counts and quantitative modelling they rather turned in direction of social factors, trying to forecast so the traffic changes and effects of different transport interventions more precisely. Within that the attention turned from one-mode models to complete transport models. For supplying examinations complete software packages were produced (e.g. BUDA-PC, City 600, TRANSURS etc.). On the whole traffic models based on empirical examinations (destination traffic surveys, often on household level¹) were made (models of demand and supply), as well as preferences of travellers were examined (for more see Berki Zs. 2008).

At theoretical backgrounds of social transport geography one should speak about by all means the study of Taylor, Z. (1980), who generalised research aspects and methodology of the former three decades. Based on it was prepared the paper of Tiner T. (1986), which can be treated as unique in the Hungarian literature. The two mentioned works examine possibilities of social transport geography systematically, and principally define basic categories through examination methods (studies). For the purpose of this study the already recognized subjects can be subdivided as follows:

¹ Among others it was made as request of Budapest, and later of BKV in 1973/74, 1983/84, 1992/94 and 2004, when transport behaviour of population and also movement of cars and trucks were examined. National survey was prepared only once in the 1980s (Berki Zs. 2008).

Figure 1.



Source: Taylor, Z. 1980, 261. p.

All three types of studies defined by Taylor can be characterised by well delimited methods and examination aspects.

III. AIMS OF THE STUDY

As it could be seen in the short review of the literature this discipline has a rather diversified field of research, hence it is useful to remake the job made more than two decades ago, and to determine along a well defined theory that what is counted to this discipline. This dissertation defines social transport geography somewhat differently from Taylor and Tiner, making examinations in more practical and problem oriented way. By determining primer research aims the start point was that transport demand is increasingly growing and its character is also changing, therefore transport infrastructure has to be developed continuously both in terms of quality and quantity, for which more profound background studies have to be prepared. For the substantiation, implementation, social adaptation of developments, namely for the operation of the system itself – I think – it is necessary to make new aspect background studies beyond behavioural examinations (and demand models) of transport planning. Namely as basic problem this study aims to contribute to the formation of well operating transport systems. Therefore in this case not only the examination of the group specific characteristics of spatial mobility is important, but also the definition of space of activity of some seeded goods and services. The aim of the examination was not the modelling of traffic, but the discovering of characteristics (transport habits, special ways of transport, space of activity etc.) of some regions with special location (regions of small villages, urban agglomerations).

The thesis also highly insists upon examinations, which played rather marginal role previously. These are for example the examinations of transport conflicts and the connections between participants of transport, as well as examinations of the drag of transport investments as results of those mentioned above.

The other notable difference is that this thesis systematise methods and knowledge of this discipline not based on types of studies, but defines concrete problems (research aims) that can be built on each other in a logical order. It makes possible to get acquainted with transport systems more deeply and to give opportunity to transform or modify systems that do not operate properly:

1. The examination of the evolution and recent state of transport systems.
2. The examination of transport behaviour and usage of space (activity space)(concerning transport habits of the whole population, and selected social groups e.g. commuters, children travelling to school)
3. The examination of transport originated social conflicts
4. The examination of interests of people taking part in transport as a process
5. The examination of systems not operating properly, and also the possibilities of their transformation (sustainable development of transport)

IV. EXAMINATION METHODS

Following the evaluation of literature the thesis in accordance with the formerly drawn aims firstly gives a short review on traditional (quantitative) methods of transport geography (the examination of transport infrastructure, supply and accessibility, efficiency indicators and traffic etc.), then introduces the so-called soft methods (e.g. questionnairing, interviewing, content analysis), which can be used efficiently in social transport geography.

In the examinations a great role was played beside own data collection also by datasets in connection with the topic (HCSO data, company datasets, press archives etc.). In order to help interpreting results also cartographic methods were used.

V. RESULTS AND CONCLUSIONS

Main results of the thesis:

1. According to *examinations of peripheral settlements* it can be concluded that choosing of vehicle is basically defined by convenience (namely the avoidance of transfers) and practicum (namely the speed of chosen vehicle, in this manner the time of travel). Although the judgement of bus transport can not be treated as negative, but it is yet

more unfavourable than rail. In connection with the judgement of bus transport it can be also concluded that those, who often travel by bus are less contented with its standards than those, who use it rarely. It is therefore not surprising that the judgement of bus transport is basically worse in settlements having no rail connections, additionally the results are in line with Tiner's examinations made in Heves county (1985). That is to say people formulate critics rather about means of transport, which they do not use regularly. By the examination of transport habits of certain age groups it was found, young and elderly people prefer public transport, while among middle-aged people the share of individual transport (automobile) is high. It was also proved in connection with individual transport, that the ownership of cars is basically depending on income conditions (the higher the per capita income in a household, the higher the probability of car ownership). In connection with transport habits of age groups some settlement-specific conclusions can be made:

- a. In places, where both bus and rail transport (main line with high frequency) is available in public transport, the share of bus travellers per day and per week is wavering, and mostly young and older age groups are represented. Rail travel is unambiguously in ascendancy when travelling is frequent.
- b. In places, where both bus and rail transport (secondary line with low frequency) is available in public transport, the share of bus travellers per day and per week is continuously high, while the share of rail travellers is low. Some kind of a division of labour can be seen between the two types of transports, namely bus is chosen by cases of frequent and short distance travel, while rail in case of rare and long distance travel.
- c. In places, where bus transport is in monopoly within public transport, the share of bus travellers per day and per week is high in every age groups, while the share of car transport is high only in the middle age group (primarily in age group of 21-40 years).
- d. It can be determined by the examination of travel habits of different age groups that public transport in daily and weekly travel is used mainly by young and old people, while car transport is applied primarily by middle aged groups group (primarily in age group of 21-40 years).

It was found in cases of shopping goods and services that depending on the size of the settlement only basic supply is ensured locally, therefore neighbourhood – central –

settlements play great role in supplying local people. Transport serving these needs is important concerning life quality of local people.

In the examination of the *agglomeration of Budapest* it was found that local people of the capital city use public transport more often (also in higher income categories), while people living in the agglomeration prefer individual transport. Only half of the people, who travel regularly with individual transport means would change to public transport if the level of services would have increased. By the examination of shopping goods and services it was proved that significant part of the agglomeration settlements offer basic services, but the role of Budapest is decisive in supplying population.

2. In the *examination of transport originated conflicts* it can be determined that conflicts can be grouped according to the way of evolution, and the characteristics of each type can be exactly determined. During the applied content analysis it was experienced that printed press gives place mostly for road traffic and road constructions, and in the examined period the problems of secondary lines were hardly mentioned. Significant difference was experienced between county and country newspapers concerning spatiality of the articles, since county newspapers mentioned only local county conflicts of transport, while national level newspapers were concentrating rather on main transport corridors and transport problems of the Budapest agglomeration. In the 5 year long examination it was also proved that the number of articles in printed press dealing with transport conflicts are in connection with decisions influencing transport (e.g. the case of highway tolls).
3. In the *examination of not properly functioning transport systems* it was determined by all the two examined types (inter-town bus transport, urban transport) that all have major problems, which have influence on local people's everyday life. In lack of well functioning – sustainable – transport systems significant interest differences can be seen, which can constrain the accessibility of goods and services (e.g. the bus and rail transport of small settlements), while significant transport originated time loss and environmental harm (pollution) can be experienced also in urban regions.

It was proved by the examination of inter-town bus transport that it plays important role in Hungary. The worsening of quality and quantity in possibilities of transport (e.g. the decrease of vehicle frequency) influenced the backward regions very badly, since making the mobility of people without cars more difficult, and sometimes influencing the possibilities of employment, too. In the case study it was introduced

that services of village management give solution for the problem, which was positively confirmed in the questionnaires of the population.

In connection with the difficulties of urban transport it was shown that the problems can be traced back partly on last years' socio-economic problems, partly on conflicts and/or not proper cooperation of actors of the transport system. A good example on it was resulted in the survey of local governments of the districts of Budapest. In the research of the agglomeration of Budapest it was found that residents in Budapest have somewhat better opinion about the transport of Budapest (almost all second treated it as acceptable), while people living in the agglomeration are rather dissatisfied (less than a third graded it acceptable, others treated it as bad or very bad). All these can be explained by the difficulties of daily commute to Budapest.

During the examinations the conceptions of solving problems of the transport of Budapest were collected, which were also judged by local population. It was found that actors of transport would be able to accept a lot of solutions, if that were significantly improve the level of transport. Exceptions are only the solutions, which need direct and immediate financial contributions (increase of parking fee, jam fee). It is suggested that decision makers handle the system more bravely and drastically.

4. In connection with the construction of M0 the *characteristics of the groups of actors of the transport system* were examined. The case study put light on that more intensive connections between actors (information change, description of cause and effects, acquaintance of interests of other groups), as well as minimal harmonisation of different interests may contribute to faster and smoother implementation of transport developments. Without this namely a never ending "war" can be evolved between different groups of actors, and only the number of arbitruments would increase. All these can result continuous doubtfulness.

VI. PUBLICATIONS IN THE TOPIC OF THE THESIS

Journal articles:

- Szabó Sz. (2004): A közlekedési eredetű konfliktusok csoportosítása, és előfordulása Magyarországon. Comitatus – önkormányzati szemle. 2004. 14. 9. 32-41. o.
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Papers in conference proceedings:

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- Szabó Sz. – Vidéki I. (2004): Dunaegyháza szociálgeográfiai képe. 2004. II. Magyar Földrajzi Konferencia. Szeged – Absztrakt kötet (szerk.: Barton G. – Dormány G. – Rakonczai J.). SZTE TTK Természeti és Geoinformatikai Tanszéke. p. 204. (CD kiadvány. 26 o.)
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