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PLACES AND STUDENTS IN URBAN ENVIRONMENT: A TIME-GEOGRAPHICAL PERSPECTIVE

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Places and students in urban environment: A time-geographical perspective. The article analyses places of concentration (in time-geography referred to as "stations") of university students in the city of Olomouc. It is a part of research into the effects the changing urban environment exerts on the spatio-temporal behaviour of the selected population segments, students being one of them. The article is primarily concerned with stations, their spatial distribution, functions, daily regime and perception. The input data were gained through the time-space activity budgets filled in by students in the period of one week. The achieved results on the one hand corroborated general time-geographical concepts and schemes, on the other hand they also proved the importance of the new phenomena, such as shopping malls, in the inner city structure in the daily paths of the university students and thus in the distribution of the stations within the city. However, there still remains a need to carry out similar research on different populations and in different urban environments in order to refine and support our conclusions by comparison of the achieved results.

Key words: urban environment, time-geography, stations, students, city of Olomouc

INTRODUCTION AND NECESSARY THEORETICAL BACKGROUND

Presented study is concerned with the character and nature of spatial occurrences of students in an urban environment in purview of a conceptual and methodological base of the time-geography. The theoretical foundations, concepts and background of time-geography lie beyond the scope of this article, but are extensively discussed for instance by Hägerstrand 1970, 1975a and 1975b, Parkes and Thrift 1975, Buttimer 1976, Lenntorp 1976, Ellegård et al. 1977, Pred 1977, Thrift 1977, Martensson 1979, Carlstein 1982 or Friberg 1993. The crucial notions of time-geography are that geographical organization can be studied on the basis of spatio-temporal behaviour of individuals including their movements, opinion, perceptions etc., and that space and time are inseparable. Every activity of an individual is thus spatially defined and takes place in a certain time span. These two conditions necessarily act together.

The article partly reflects and is inspired by the wider concepts of time use and everyday activities of an individual or a group of individuals that have been of steady interest to researchers since about 1960 (see for instance Meier 1959, or the seminal compendium edited by Szalai 1972). Geographers' contributions to the issue date back to the second half of the 1960s and have been closely connected with time-geographical approaches initially proposed by Swedish geographer Torsten Hägerstrand and his associates (for references see above).

The primary purpose of this article is a focus on an issue of the spatial distribution and character of stations, as one of the several key concepts applied in time-geography, which serve as places of individuals' activities and interactions, within the university city of Olomouc. Apart from the localization of stations, the article also attempts to identify and analyse the function and daily regime of stations, and the way they are perceived by the surveyed individuals. The article also attempts to take into account a question of reflection of the objective reality in the spatio-temporal behaviour patterns of a specific population segment in an urban environment, specifically the question of the spatial occurrence of individuals in connection with new phenomena in an inner city structure unseen before 1990, typically linked with leisure and shopping activities. In this respect, it was the university students that were selected as the population segment to be surveyed since their spatio-temporal behaviour is not as restricted in terms of "compulsory" activities as it is with the productive population segments. Thus we arrive at an important common denominator in the form of concepts of leisure, free time or entertainment between the objective reality expressed in a localization of new phenomena in the city structure and the spatio-temporal behaviour of the students partly expressed in the places of their concentration. The time-geographical approach to the relation between the city structure and the occurrence of the students is not only able to provide a spatial link between the two phenomena but also a temporal insight into the dynamic of this relation with regard to the character of the individuals' activities (either compulsory or leisure).

The analysis of the spatio-temporal behaviour of an individual or a group of individuals in time-geography is centred on five fundamental assumptions (Hägerstrand 1975a, Martensson 1979 and Ira 2001). These are in a way reflected at a certain meta-level in the methodological and empirical pursuit of the article, such as the questionnaire design, map construction or some reasoning, and can be briefly paraphrased as follows: 1) an individual is indivisible, 2) an individual has a limited amount of time, 3) every action and movement consumes time, 4) physical capacity of a place is limited, and 5) every situation is rooted in the past. The first two assumptions are valid for non-living objects as well. Regarding the nature of the above-mentioned points we are able to follow the existential trajectories of an individual (or a group of individuals) in space and time and thus we are able to define their paths, which means either a life path or a daily path, which can be graphically expressed in a form of the 3D diagram and set into a particular context: either project, everyday, social or geographical (Pred 1977 and Ira 2001).

An important aspect of the time-geographical research is that the activities and movements of individuals encounter various forms of constraints of different characters. Regarding the objectives of the article they are crucial not only for the occurrence of a station but also for its function and daily dynamic. Usually the literature defines three types of constraints (Pred 1977, Ira 2001 and Miller 2005): 1) capacity/capability constraints (conditioned by the physiological needs and physical laws), 2) coupling constraints (conditioned by the effort of individuals to join in a particular and mutual social activity), and 3) authority constraints (conditioned by the general rules, laws and other types of barriers). Both the fundamental assumptions and the constraints themselves are able to

specify the possibilities of the occurrence of students within a city during a day, being aware in advance of the distribution of compulsory (such as physical needs, educational process) and leisure activities. The time-geography thus contributes to an easier comprehension of the objective reality by exclusion of excess information.

Even though time-geography faced some often contradictory criticism in the 1980s, concerning for instance either too much or not enough objectivity, masculinism, restriction to smaller geographical scales or little consideration for social environments and individual needs (Hallin 1991, Rose 1993, Lenntorp 1999 and Gregory 2000). During the 1990s it has been revived by introducing both new theoretical impulses and new fields of investigation. In the field of theory Hallin (1991) and Lenntorp (1999) argue that criticism would shift the discipline from geography as a spatial science to a social science, which would deprive the time-geography of its unique spatio-temporal character. The strength of time-geography lies in the recognition of time and space as related resources. Hoppe and Langton (1986) have attempted to bridge the gap between theoretical assumptions and empirical achievements at different hierarchical levels and time spans.

Such a stream of thoughts inspired new studies stealing in a way the wind out of various forms of criticism. They have been concerned with environmental issues including resource management and sustainability (Thrift and Pred 1981, Hallin 1991), municipal and community planning including the organization of transport systems and social exclusion (Richardson et al. 1995, Schönfelder and Axhausen 2003), the organization of factory production processes (for the case study of the Volvo plant see Ellegård 1996), a wider concept of the quality of life including its perception (Ellegård 1999b and Ira 2006), and the interrelated issue of women, household care and work (Dyck 1990, Kwan 1999, McKie et al. 2002, Bonke and McIntosh 2005). The influence of modern information and communication technologies on social interactions is observed by Couclelis (2009). The issue presented in this article in general related to the mobility and movements in an urban environment and the geographical context of everyday life has been discussed for instance by Chapin (1974), Drbohlav (1990), Ellegård (1999a), Ira (2000), Kwan and Lee (2004) and recently by Novák and Sýkora (2007) or Kwan and Ren (2008).

METHODOLOGY, RESEARCH DESIGN AND PARAMETERS

As mentioned several times above, it is the stations that are the primary concern of the article. The importance of studying the stations is pointed out, for instance, by Pred (1977 and 1981) or later indirectly by Lenntorp (1999). A station in the time-geographical concept is understood as any place where an individual spends a certain amount of time. Thus, in the daily path of an individual, stations possess a conspicuous trait reflecting the fact that movements of individuals are not registered while staying there. The stations have temporal (either daily or seasonal) and spatial dynamics. It means that some stations disappear during a particular daily or seasonal period, and that their concentration and spatial distribution depends on the character of the geographical environment.

In an analysis of individuals' daily paths the stations have the important function of "meeting" places. From this point of view a station is a place where social interactions occur in the form of so-called activity bundles. In this respect, stations are the arenas of the most significant events of an individual's daily path and places where the individual daily paths converge and after a certain time also diverge. According to the nature of the event or activity, stations can basically possess the character of production, consumption, or recreation. In this respect, the typical examples of stations are workplaces, households, and for instance swimming pools as recreational facilities. A variant typical for students, as the group surveyed in this article, is presented in Fig. 1.

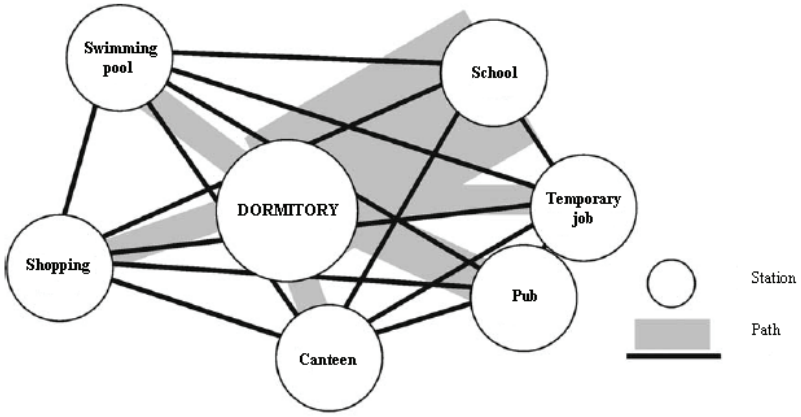

Fig. 1. General model of students' stations

Source: according to Schönfelder and Axhausen 2003; own adjustments.

In this article the stations are understood in the narrow sense of the term: as places of spatial-temporal interactions of members of a target population, which means that the interactions have to be documented and registered in the questionnaires (also referred to as the time-space activity budgets or diaries). The stations were examined in the territory of the city of Olomouc (pop. 100 000), the Czech Republic. The target population sample consisted of university students, who were recruited by the method of a "snow ball" with the following requirements in order to secure a maximum objectivity and variety of the target sample: 1) numbers of students should be roughly equal in terms of sex of the individuals, 2) the students should cover most of the faculties of the university, 3) students should have resided roughly equally in a) the students dormitories, b) in shared lodgings, and c) in Olomouc as their place of permanent residence.

The data on the daily paths of the individual students and thus on their spatial occurrences were collected through questionnaires with the form of time-space activity budgets. Students from six faculties filled the diaries during one week with a condition of at least five days spent in Olomouc; 53 of them could be used for other research (29 filled by women and 24 by men). The total number of distributed activity budgets was higher but 17 of them were not filled correctly and thus could not be processed and included in the results.

The layout of diaries reflected the fact that the stations were the subjects of research. As such, the time-space activity budgets registered the following thematic categories both in the form of open and closed answers: 1) activity time period, 2) activity type (free category not to be chosen from a predefined list), 3) exact location of the activity (preferably in a form of its name and address), 4) the extent and composition of the social group where the activity is performed (again free category as in no. 1), and 5) the emotional state of an individual based on the activity performed and the location setting.

While the first four categories are rather obvious, some comments on the emotional state should be made. Its inclusion in the time-space budget covers the phenomenological context, in the form of recording subjective feelings and evaluations, representing thus a "puff of fresh air" in time-geographical research. For the sake of easier data processing this category was conceived as a closed one and assumed five values: 1 for purely positive feeling (in the questionnaire form expressed as "I feel great"), 5 for purely negative feelings (in the questionnaire form "I feel terrible"), 3 for indifferent feelings, and 2 and 4 ensuring a higher resolution of both positive and negative subjective perceptions of personal feelings.

The data collected by the time-space activity budgets had to be, in the first instance, classified into seven time categories (periods) in the day in order to fulfil our research objectives regarding the development of stations and their characteristics. This step enabled us to describe and assess the spatio-temporal changes in the distribution of stations and changes in their importance. The following general and average time periods have been defined:

- 00:01 – 06:00 as the assumed sleep time,
- 06:01 – 08:00 as the time of awakening, breakfast and morning personal hygiene,
- 08:01 – 11:00 as the time of forenoon activities,
- 11:01 – 13:00 as the lunch time,
- 13:01 – 18:00 as the time of afternoon activities,
- 18:01 – 20:00 as rest or leisure time,
- 20:01 – 24:00 as the time of evening activities, personal hygiene, and falling asleep.

Of course, not every locality takes on the character of a station in all time periods. The spatial occurrence of an individual in a certain time period was assigned one point for a station. All these occurrences were summed up and served as a basis for the assessment of the importance of a station.

RESULTS AND THEIR DISCUSSION

The time-space activity budgets identified 74 localities with at least one occurrence of a student during the week. Regarding the definition of the stations the localities with just one occurrence only had to be excluded (they mostly served the catering and entertainment purposes). The identification of all 55 stations is provided in Tab. 1.

Tab. 1. Identification of stations

No.	Station	Address	No.	Station	Address
1.	Dormitory	Mariánská 9	29.	Albert supermarket	Svobody 31
2.	Dormitory	17. list. 54	30.	Billa supermarket	Hynaisova 11
3.	Dormitory	Šmeralova 6	31.	Kaufland supermarket	Štursova 3
4.	Dormitory	U Letiště 786	32.	Olympia shopping centre	Olomoucká 90
5.	Dormitory	Šmeralova 8	33.	Moravian theatre	Svobody 33
6.	Dormitory	U Sport. haly 4	34.	Our Lady of The Snow church	17. list. 54
7.	Fac. of Arts	Vodární 6	35.	Metropol cinema	Sokolská 25
8.	Fac. of Arts	Na Hradě 5	36.	Smetanovy sady gardens	–
9.	Fac. of Arts	Křížkovského 10	37.	Bezručovy sady gardens	–
10.	Fac. of Science	Svobody 26	38.	Children and youth house Olomouc	17. list. 47
11.	Fac. of Science	Šlechtitelů 11	39.	U club	Šmeralova 12
12.	Fac. of Theology	Univerzitní 22	40.	Health centre	Svobody 32
13.	Fac. of Science	Tomkova 40	41.	Kamenný mlýn restaurant	Mlýnská 4
14.	Fac. of Medicine	Hněvotínská 3	42.	Garrigue gambling club	Masarykova 11
15.	Fac. of Physical Culture	Míru 115	43.	Mc Donald's	Kafkova 2
16.	Fac. of Education	Žižkovo nám. 5	44.	Kratochvíle tearoom	Sokolská 36
17.	Fac. of Law	17. list. 8	45.	Morgan restaurant	Mlýnská 3
18.	Fac. of Medicine	Svobody 8	46.	Dobrá čajovna tearoom	Havelkova 7
19.	Fac. of Physical Culture	Hynaisova 9	47.	Opera coffee house	Horní nám. 21
20.	Fac. of Education	Purkrabská 2	48.	Hanácká restaurant	Dolní nám. 38
21.	Canteen – main	17. list. 54	49.	Caesar restaurant	Horní náměstí
22.	Canteen – Neředín	Míru 113	50.	St. Wenceslas brewery	Riegrova 22
23.	Zbrojnice library	Biskupské nám. 11	51.	OSA bar	Mahlerova 15
24.	Research library	Bezručova 3	52.	Envelopa	17. list. 8a
25.	Konvikt university centre	Univerzitní 3	53.	Sport hall	U Sport. haly 2
26.	Prior supermarket	8. května 24	54.	Swimming pool	Legionářská 11
27.	Globus, Olomouc city	Pražská 41	55.	Athletic stadium	17. listopadu 3
28.	Shopping centre Haná	Kafkova 8			

Localization and function of stations

Most stations were located in the historical centre of Olomouc and its immediate vicinity (see Fig. 2 – the numbers of stations agree with the numbers in Tab. 1), where most educational institutions and entertainment opportunities are concentrated. These stations set in traditional locations reflect the long-term development of the inner structure of the city. The location of the remaining stations is mostly related to two different phenomena emerging in the city structure after 1990. The first is earlier and reflects the quantitative development of the tertiary education-related facilities (including dormitories, canteens etc.), which started immediately after 1990 and has not been fully completed yet. These stations sometimes occur in clusters (for instance Nos. 4, 15, 22 in the western or Nos. 6 and 53 in the northern suburb of Olomouc) partially resembling university campuses and differ in their functions (see below). However, such clusters are not specific just for the suburbs and the above-mentioned new phenomenon and can also be identified in the inner part of the city (for instance Nos. 2, 3, 5, 21). Realizing the nature of these stations, the activity bundles possess a "compulsory" character.

The second phenomenon – shopping malls – started to emerge in the second half of the 1990s as a completely new element in the city structure. Generally speaking, the first shopping malls were located in suburbs, later, in the mid 2000s, also in brown fields, which has not yet been the case Olomouc (station no. 31 is located in a former brown field, but it is not a typical shopping mall, it is rather a supermarket). These stations are not necessarily related only to shopping, but they show a wider range of activities: both working and leisure. Exceptionally a station, almost entirely limited to educational purposes, is located randomly without any relation to the development of the city's structure.

Having analysed the time-space activity budgets the stations were divided into seven categories according to their dominant functions (see also Fig. 2):

1) Stations with an accommodation function (six stations) – typically dormitories, other types of accommodation such as lettings or permanent residences do not usually meet the definition of a station,
2) Stations with an educational function (sixteen stations) – including all university buildings where the educational process takes place and also libraries,
3) Stations with a catering function (three stations) – including canteens and some restaurants,
4) Stations with an entertainment function (nineteen stations) – including cinemas, theatres, clubs and pubs, but also city parks and gardens,
5) Stations with a shopping function (seven stations) – supermarkets in the city centre and shopping malls in its suburbs,
6) Stations with a health care function (one station),
7) Stations with a sporting function (three stations) – a swimming pool, athletic stadium and sports hall.

Same stations can show a multifunctional character. For instance, some students use the city parks as sports fields, others as a recreational or entertainment

sites. Similarly some restaurants can change from places to eat to places for passing time.

Besides the above presented functional typology of stations, it is necessary to point out a specific activity bundle occurring in some types of stations (with entertainment, shopping or catering functions), which for some individuals act as a work place. Thus some individuals occur in the station within their leisure time, others within their "compulsory" activities. The difference is manifested mainly in the subjective perception of such a station (see the comments in the chapter on this issue below).

Fig. 2. Localization and function of stations

Daily dynamics of stations

As the individuals move around the city, stations appear and disappear during a day and their significance expressed for instance by the number of individuals may vary. The daily dynamics of the stations is presented in Fig. 3, where each column represents the number of individuals in a station for a particular time period (see the preceding chapter). Even though some stations showed irregular characteristics, based on the dominant daily regime we have identified the following types of stations:

1) Stations with an all-day activity – typically stations with an accommodation function and daily regime showing decreasing significance towards noon and increasing significance towards midnight,

2) Stations with a day activity, which are not active between 20:01 and 6:00 or 8:00 o'clock and show an inverse daily regime in comparison with the preceding type – typically stations with educational, but also shopping or sporting functions,
3) Stations with noon activity – typically stations with a catering function,
4) Stations with an afternoon and evening activity – typically stations with an entertainment function, which emerge after 13:00 o'clock,
5) Stations with a night activity – exclusively stations with an entertainment function, which emerge around 18:00 o'clock and maintain their significance until midnight.

According to the significance of the stations most activity bundles occur, not surprisingly, at the stations with the educational, accommodation, and also catering functions (Fig. 3). Other stations appear to be substantially less significant. The character of activities determines this pattern. The "compulsory" activities of students (education, accommodation and also catering) tend to be more spatially and temporally concentrated, leisure time activities on the other hand show a higher level of spatial dispersion and logically smaller significance of the particular stations.

Fig. 3. Daily regime of stations

* Columns regard six defined time periods: from left to right 00:01 – 06:00, 06:01 – 08:00, 08:01 – 11:00, 11:01 – 13:00, 13:01 – 18:00, 18:01 – 24:00

Subjective perception of stations

The subjective perception of stations was assessed according to their emotional load, which was included in the time-space activity budgets and assigned values from one to five (see the chapter on methods). The final value of the emotional load was gained for each station and seven time periods as an average value of all emotional loads of students present during a period in a station. The results are shown in Fig. 5, where the positive emotional load values reach above the x-axis of the charts, negative values go below it, and indifferent values coincide with the x-axis. It is, however, also necessary to take into account the daily regime and changing significance of the stations during the day.

The analysis proved that students consider their perceptions predominantly positive. The cumulative values of the emotional load according to the station function are shown in Fig. 4. In total no type was perceived negatively, only the stations with the health function were seen indifferently. The stations with the entertainment function scored the highest positive values, followed by the stations with the catering and accommodation functions. The lower positive emotional load is possessed by the stations with the educational function, which, taking into account that university students were surveyed, can be either a little surprising or a little unpleasant discovery.

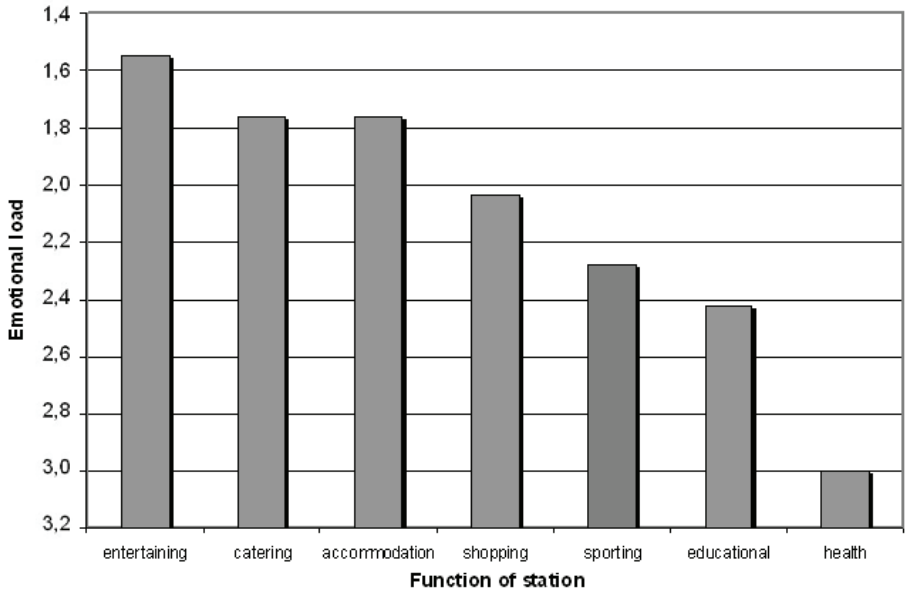

Fig. 4. Cumulative values of emotional load according to stations type

As we consider the average values of the emotional load we have to be aware that in some cases the perception of the multifunctional stations can differ. If a station is a place of leisure time activities, it is perceived rather positively, but if it is a work place, it is perceived negatively. The resulting values,

however, do not reveal this difference in opinions, as explained above. Negative feelings are generally expressed towards activities related to physical and mental effort (study, physical exercise or work).

The daily regime of the emotional load frequently corroborates one of the basic time-geographical assumptions, that every situation is rooted in the past. Thus for instance the stations with the educational function assume decreasing values of the emotional load in two horizons during the day: the first from the morning towards lunch time, the second from lunch time towards the evening. The reasons are obvious. The oscillations are caused by the alternation of the "compulsory" and leisure activities. Some stations with the educational function even showed the increasing trend of positive feelings of the students towards the evening, probably in expectation of evening and night revelry.

Fig. 5. Subjective perception of stations

* Columns regard six defined time periods: from left to right 00:01 – 06:00, 06:01 – 08:00, 08:01 – 11:00, 11:01 – 13:00, 13:01 – 18:00, 18:01 – 24:00; positive feelings are expressed above the x-axis of the chart, negative feelings below

CONCLUSION

Time-geography can contribute to the assessment of changes and development in the urban environment with an integration of time dynamics as the key novelty. The study of stations, their function, daily regime and perception brought several important conclusions both methodological and general. Regarding the methodological part of this article the method of data collection and

their processing showed that it is extremely important to record the exact location of individuals during their daily paths. Otherwise some percentage of the time-space activity budgets cannot be used. The layout of the diaries and the instructions should reflect on this finding in order to improve the quality of input data gained by technically demanding research.

The functions of stations that have been suggested in this article more or less correspond to the general model proposed by Schönfelder and Axhausen (2003) in Fig. 1. Our situation did not, however, identify any station with a working function. It does not mean that the university students do not participate in the part-time job market, but these activities are spatially extremely dispersed and thus do not qualify to form stations as they are understood in this article.

The selection of the target population (students) also influenced the emergence and character of the stations. The spatial pattern of the stations, their function, dynamics, and perception is partly determined by the fact that the daily paths of the surveyed individuals are not completely random. The students tend to occur and interact at "compulsory" locations (this term should not be taken literally since it is not conditioned by the capability constraints) where they form the activity bundles related to education or accommodation. This is probably the most distinct specific of this population group.

We consider that the proven role of the new phenomena in the inner city structure in affecting the daily paths of individuals is another important finding. The first phenomenon that we have mentioned in one of preceding chapters, the tertiary education-related facilities, rather coincides with the "compulsory" activity bundles, which enhance its significance, and is not brand new in its character, but its influence on the daily paths of students is clearly visible.

The supermarkets and more distinctly the shopping malls as multifunctional stations, possessing shopping, entertainment and working functions, also play a relatively important role in the daily paths of the students, their significance being slightly higher than the significance of other stations with entertainment or shopping functions. Their significance also has to be assessed with awareness of their location and accessibility, when the shopping malls are frequently located in suburbs.

The research presented in the article helped us to comprehend the link between the objective reality of the inner city structure and the spatio-temporal behaviour of the university students. Finally we articulate an important need to carry out the same research on different populations and in different urban environments in order to refine and support our conclusions by comparison of achieved results and to arrive at more general inferences.

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MIESTA A ŠTUDENTI V URBÁNNOM PROSTREDÍ Z POHĽADU GEOGRAFIE ČASU

Predložená štúdia sa zaoberá charakterom a povahou priestorového výskytu študentov v urbánnom prostredí v rámci konceptuálnej a metodickej bázy geografie času. Štúdium časovo-priestorového správania sa jednotlivca alebo skupiny je predmetom záujmu geografov od 2. polovice 60. rokov minulého storočia a je úzko späté s lundskou

geografickou školou. Podstata geografie času spočíva v názore, že je možné študovať geografickú organizovanosť na základe časovo-priestorového správania sa jednotlivcov a v axióme, že priestor a čas nemožno od seba oddeľovať. Geografia času taktiež definuje základné predpoklady a obmedzenia časovo-priestorovej existencie jednotlivcov. Napriek určitej kritike geografia času stále reprezentuje jeden z aktuálnych a relevantných smerov v geografickom bádaní.

Článok sa zameriava na problematiku priestorového rozloženia a charakteru staníc, teda jedného z kľúčových konceptov používaných v geografii času. Stanice sú skúmané na území univerzitného mesta Olomouc a okrem ich lokalizácie sa v článku zaoberáme aj ich funkciou, denným režimom a vnímaním z hľadiska pocitov jednotlivcov. Príspevok sa tiež venuje otázke reflexie objektívnej reality v časovo-priestorovom správaní vybraného populačného segmentu v urbánnom prostredí, pričom tieto premeny spájame s novými javmi vo vnútornej štruktúre mesta, súvisiacimi predovšetkým s trávením voľného času a nakupovaním. V tejto súvislosti sme ako populačný segment vybrali univerzitných študentov, pretože ich časovo-priestorové správanie nie je obmedzované do takej miery, ako je to napríklad u produktívneho obyvateľstva. Takto nachádzame spoločnú základňu vo forme konceptu voľného času pre objektívnu realitu (vyjadrenú lokalizáciou nových fenoménov v štruktúre mesta), ako aj pre časovo-priestorové správanie sa študentov (čiastočne vyjadrené miestami ich koncentrácie). Princípy geografie času nám navyše umožňujú študovať nielen priestorové väzby medzi obidvoma javmi, ale aj časovú dynamiku tohto vzťahu.

Článok sa primárne venuje problematike staníc, teda miest, kde dochádza k interakciám denných ciest aspoň dvoch jednotlivcov a kde títo jednotlivci trávia určitý čas. Priebeh denných ciest, a v tom prípade aj lokalizácia staníc v meste Olomouc, sa zisťoval pomocou časovo-priestorových harmonogramov, do ktorých vybraná populačná vzorka doplňovala údaje týkajúce sa: 1) času, počas ktorého sa aktivita uskutočňovala; 2) typu aktivity; 3) presnej lokalizácie miesta, kde sa aktivita uskutočňovala; 4) sociálneho kontextu a 5) momentálneho emocionálneho rozpoloženia jednotlivcov. Študenti vyplňovali časovo-priestorové harmonogramy počas jedného týždňa, použiteľných na výskum bolo 52 harmonogramov.

Za jeden z najdôležitejších výsledkov považujeme skutočnosť, že sa potvrdil predpoklad vplyvu nových javov vo vnútornej štruktúre mesta na denné cesty vybraného populačného segmentu. Tieto javy ovplyvnili lokalizáciu a význam staníc, rovnako ako aj ich denný režim. Išlo hlavne o stanice spojené s edukačným procesom vrátane ubytovacích a stravovacích zariadení. Treba poznamenať, že študijné záležitosti majú skôr „ povinný“ charakter, čo sa prejavilo najmä vo význame staníc. Druhým typom staníc boli nákupné centrá, ktoré tiež viditeľne ovplyvnili denné cesty sledovaného populačného segmentu. V tomto prípade však stanice fungovali predovšetkým v režime voľného času, či už išlo o nákupy alebo zábavu.

Uvedomujeme si, že je nevyhnutné uskutočniť rovnaký výskum aj na iných vzorkách populačných segmentov a v iných mestách, aby sme boli schopní získané výsledky ďalej spresniť a naše závery podporiť porovnaním všetkých dosiahnutých výsledkov.