PARADIGM CHANGE IN SOCIOLOGY

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Abstract: Two paradigms of sociological research are compared. Based on classic methods of data collection such as observation, representative sample taking and experimentation sociological research preceding the Information Age was to identify laws of society and sociologists were keen to serve emancipatory interests. Social researchers were driven by the faith in "good society". Sociological research of the Information Age are based on log-ins of individuals which provides unlimited opportunities to store and retrieve data in datawarehouses. As a consequence examination and analysis of real time data of real populations becomes possible. Due to a direct contact with real social processes profound change in the nature of sociological research and theory building is predicted. Two applications of the new type of sociological research are presented in the article.

Keywords: Information Age, digital divide, social reform, real time databases, Internet

THE INFORMATION AGE

Life has no area left unaltered by the devices which appeared in the Information Age. The amount, storage, dissemination method of and access to information generated within society have radically changed. The groups of social actors (individuals, groups and organizations) who are able to make and maintain immediate contacts with each other keep growing day by day. The emergence of the Information Age, in which practically everyone will be able to provide and obtain information on everything, everywhere and at every moment, is not a utopia anymore. Therefore engagement in communication processes will be the basis of social stratification – a much more volatile, flexible and customized foundation than the dimensions which constituted the bases of stratification in earlier periods (Castells 1996, 1997, 1998).

In this Information Age, both the globe and humankind lose their abstract nature. The scenes and players of the Human Comedy show unprecedented coherence and unity, while, of course, the Comedy itself goes on; changing what is to be changed (Dessewffy 2002).

Humankind is divided into two parts according to the distribution of opportunities offered by the new epoch. Many people consider this divide, which separates those

who live within the information society from those who are excluded, a cleavage. However, division is not a new phenomenon: the history of mankind is also the history of cleavages among its various groups. The new feature here is that there is a better chance to narrow the digital gap generated by the Information Age than to close the social gaps which were created earlier (Dombi and Lafferton 2001).

Once there is a technology which radically transforms social existence, changes established social relations, and generates unprecedented new relationships, there must be a new science which is, on the one hand, the driving force of changes, and, on the other hand, it can adequately track, describe and explain the consequences of these changes. The Information Age brings about changes in the nature, function, organization, and taxonomy of science. These changes necessarily have an impact on sociology, since the information society enriches social life with new features – sociology preceding the Information Age does not have and cannot have the proper language, methodology or theoretical apparatus to describe and explain these features (Nyíri 2001, 2003).

THE PARADIGM OF PRE-DIGITAL SOCIOLOGY

Sociological investigation is designed to identify laws, or at least well-predictable probabilities and causal models, through spying out the secrets of social existence.

It is not irrelevant, of course, what the researcher chooses to examine, describe and explain, and for what purpose. Among the many suitable examples, a notable study by Lazarsfeld can be mentioned, which made it clear that even seemingly obscure collective actions like political elections can be predicted accurately with a systematically built method (Lazarsfeld et al. 1948). Lazarsfeld's methodological model carefully demonstrates the steps through which accurate answers can be given to theoretically well-thought and well-formulated questions, and, under subsequently developed new conditions, new questions can be raised, which again allow us to seek new answers. The social reality presupposed by Lazarsfeld's paradigm is built on axioms which do not hold water in the Information Age.

Pre-digital sociology sought constant principles which help understand both society and social organization. Although the world did not remain the same, the forces inducing change did appear to be permanent. Many scholars, in many ways, explored this permanence, which is (was) caused by a seemingly omnipresent orderliness or order, and even if social change appeared on the agenda, no question was raised about the desirable direction of change. Sociologists were confident that changes inevitably point toward an improved status. They identified the basic elements of the static social structure either as Marxian classes or Weberian strata (orders). Large groups of society could link to each other vertically and horizontally. In both dimensions, one could speak about inter- or intra-generational mobility between major social groups, which could be interpreted basically within the framework of the nation state, and within clearly definable time and space limits. The subjects of sociological examinations, as well as the audience of sociology, also lived within this nation-state framework (Némedi 2000). Sociologists were driven by the modernist, progressivist and

emancipative "reform rage", which had been characteristic of sociology and also determined the critical orientation of sociological writings. They wanted to reform the world and remedy social ills in the name of equality, justice, tolerance and conflict-management. Sociologists believed that, due to their insight and stable values, they are the natural allies of pro-reform politicians. They wanted to be intellectuals and politicians at the same time, considering it to be their mission to promote the arrival of a "good society".

From the perspective of reform values held to be of objective validity, the social mechanisms to be improved seemed to be the captives of subjective spells which hindered progress, and it was thought to be a prerequisite of progress-promoting reform action to understand, describe and identify these mechanisms, via cleaning them from delusions. This dual role of the explorer and deliverer constituted the professional ethos of the sociologist.

Hundreds and thousands of costly surveys were conducted which were built on the problematization of particular social phenomena and promised a solution to the problem in question through the utilization of survey findings. A host of sociological institutions (university departments and faculties, institutes, societies, journals and publishers, etc.), established under the spell of problem-management, had emerged in Western societies (and later in their Eastern counterparts, which made reform efforts).

As more and more researchers began to apply the multivariate procedures of mathematical statistics, increasingly complex, interesting and theoretically well-structured results had been achieved. While multidimensional techniques took researchers closer to the understanding of the postulated social reality, they could not cope with the problems of time-lag. Sociological research was time-consuming in the pre-digital era. Data collection often took months, which made surveys lengthy and also made it difficult to determine what exactly was measured. Data recording and analysis were frequently prolonged, the period between data collection and publication could span an entire decade. However, sociologists, driven by the "reform rage", yearned for more than research conducted in the name of seeking truth. They wanted to be involved in sociopolitical decisions and practical steps too. But the time-span between data collection and research completion was too long to achieve this goal, which also meant that the results of research could not be utilized. Research was good only for justifying measures already taken by the political elite, at best.

THE PARADIGM OF DIGITAL SOCIOLOGY

The digital age provides unlimited opportunities to store and retrieve data, and examine or analyze them from a variety of viewpoints. Since these data are all generated within society, they obviously constitute a matter of interest for sociology (György 2003).

The starting condition of digital sociology is raising awareness of data sets generated within society. Sooner or later the operation of all social institutions will be shifted, partly or entirely, to cyberspace. Then digitally recorded, real-time data referring to real developments will be generated. It means that former interview- or

observation-based sociological examinations, which were so desirable, but also costly and time-consuming, and sampled only a fraction of the populations in question, will become superfluous.

It requires special theoretical and methodological skills to examine databases which were built from extensively generated real-time data referring to actual actions. When developing theoretical considerations, it should be taken into account that there are no static borderlines between the entities chosen as the subjects of investigation (individuals, groups or institutions) in the Information Age. Similarly, there are no boundaries between different disciplines. There is a conspicuous resemblance between the social actors living and functioning in cyberspace and the mathematized models concerning the existence of phenomena examined by the exact sciences (Fokasz 2003). When observed from the perspective of chaos vs. order, man seems to be only one of many variable elements in the world.

The renewal of methodology is characterized by the continuous tracking of changes, the linking of databases, and the multivariate analysis of data concerning problematic processes. A sociologist experienced in making inquiries into digital-age issues should also be a programmer and software developer. Digital sociology attributes a higher value to experimentation, which was formerly "scientific" only in its needs rather than its actuality, due to the limited opportunities to create experimental and control conditions.
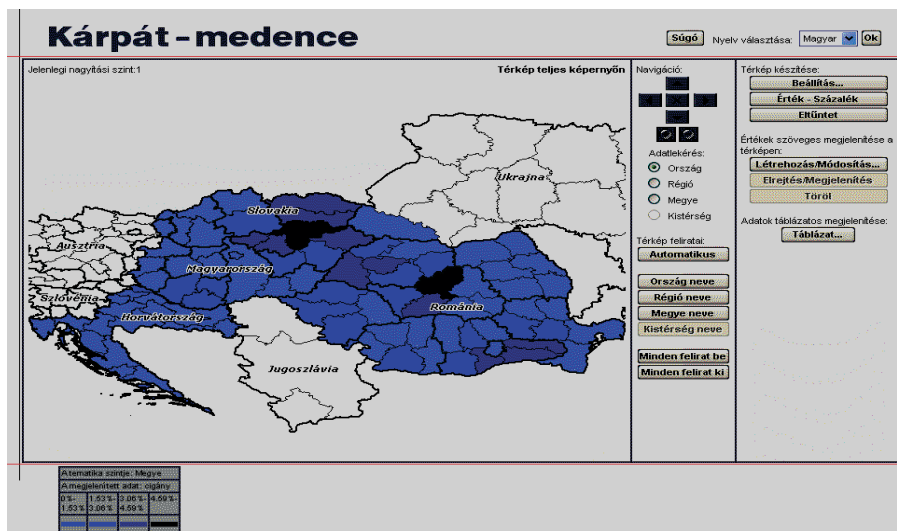
Under circumstances which can be considered real with respect to the amount of data generated, new prospects emerge for experimentation with people based on social considerations which can give answers to predominantly socio-psychological questions.

Due to a direct contact with real processes, the relationship between sociology and social practice will be transformed. Businessmen, politicians working at the national and local levels of government, leaders of public utility organizations, media managers and professionals involved in various human services expect sociologists to fulfill the organizational intelligence functions, which are indispensable under the conditions of the information society, rather than to be reform-oriented and ideologically justify the actions considered desirable by the political system. It means that sociologists should be able to provide background information for decision-making and they should be ready to propose solutions to dilemmas of action.

In the past also, it was only an illusion that sociologists, as the allies of "progressive forces", can contribute to the creation of a society which conforms to the noble values held by them. An ideal or a grandiose plan is not enough to induce the intended social change, as a bright idea is not enough to launch and run a modern enterprise. For an innovative idea to be implemented, decisions have to be well-founded. In the Information Age changes in social policy are built on calculations of scientific precision which are either based on directly measured data and online databases or probabilities calculated from the measured values, and thus they are questionable (Beck 1991). Modern databases reflect changes in the world with the highest speed possible, often almost immediately. These days it is by no means considered a futuristic idea to create an online census register with a database that can be accessed and managed by hospitals and immigration offices via direct internet connections, and thus it can provide up-to-the-minute information on the population. Similarly, it is not

impossible for the students of an Internet-based school[1] to obtain their grades based on the time spent studying the subject matter or the number of successfully completed tasks rather than through the traditional "subjective" process.

Currently, Hungary has such a database at the Interethnic Knowledge Management (IKM) portal site,[2] which can be accessed through Internet connections from any part of the world, and contains both the socio-demographic, historical and settlement-level data of the Hungarian people living in the Carpathian Basin and information on support provided by the state for Hungarians living in neighboring countries, as well as the results of political elections or the roster of teachers working at the region's scientific workshops and universities. The following map illustrates a possible application of the IKM portal.

Map 1. The proportion of Romany people in the "counties" of countries located in the Carpathian Basin

Let us propose a project which is aimed to reduce tensions between Romany minorities and majority societies in the Carpathian Basin; or another one which is designed to create education centers, helping Romany students achieve higher levels of education; or yet another one, which could perhaps facilitate the submission of applications for support to Brussels on behalf of Romany cultural centers. How can we set off? First of all, we should access the IKM portal and prepare the above map or a similar one. Representational levels, as well as intervals or assignable text files (for example, the media coverage of conflicts), can be individually edited on this map, and data can be updated during surveys, almost concurrently. The knowledge base can be quickly, easily and simply managed and accessed. In addition to civil applications, governmental, educational, research and business applications are also possible.

1   The Miskolc-based digital secondary (high) school can be accessed at *www.digitaliskozepiskola.hu*.
2   The Interethnic Knowledge Management portal can be accessed at *www.ikm.hu.*

THE INFORMATION SOCIETY IN HUNGARY

The latest devices allow more and more people to obtain information which can be retrieved from databases updated online (Csepeli 2003a). Despite the fact that the threat of "total control" is often present, many would like to have access to at least aggregated data, and in this case access, especially access to data which were compiled from public funds, can be regarded as their civil right.

Currently, access to knowledge stored on the Internet is not equally distributed among citizens. Some people have no chance to utilize knowledge stored in databases, possibly because they lack the necessary material conditions or do not know how to use information technology tools. Therefore the key issue is the ability to use these tools and the Internet (Z. Karvalics and Dessewffy 2003; Csepeli and Prazsák 2003).

Internet usage is determined by the combined and ever-changing effect of several factors. In September 2003 the TÁRKI Social Research Center interviewed 1033 adults in Hungary. This representative survey was intended to explore the use of IT tools through a number of questions, focusing on the determinants of Internet use. The effects of several dozens of factors were examined through linear regression analysis. Finally, 9 aggregated dimensions and 26 variables were included in the path model which "discovered" the reasons for using the Internet in a proportion of 55 percent.
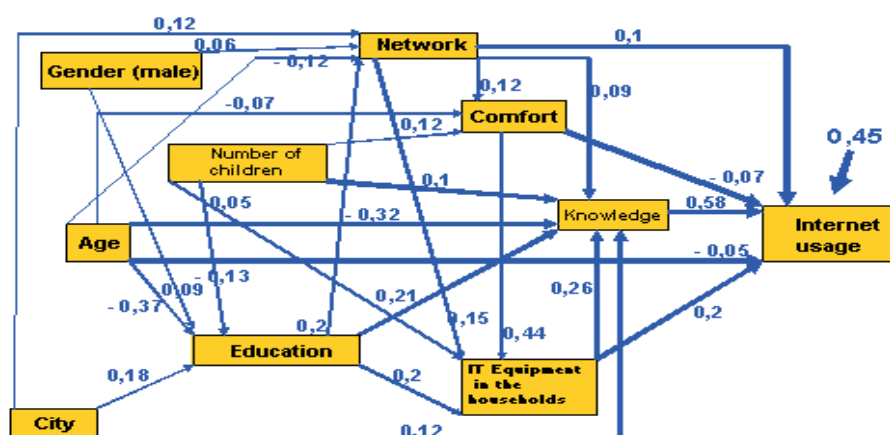

Figure 1. The path diagram of factors determining Internet use (September 2003)

The "components" of the aggregated dimensions used in the model are as follows:
"Knowledge": practical knowledge (familiarity with the term "broadband", use of a business software package, and IT qualifications)
"Equipment": IT devices available in the household (DVD player, VCR, telephone and TV, etc.)
"Comfort": appliances available in the household (e.g., washing machine, dishwasher, etc.)
"Network": the number of social contacts maintained through IT devices (telephone, mobile phone, or e-mail).
"Education": the level of education completed
"Number of Children": the number children living in the household
"Gender": male (dummy)."Age": the respondent's age. "City" (dummy)

Basic IT knowledge[3] has the greatest effect on Internet use: the higher one's level of knowledge is, the likelier it is that he or she uses the Web. People whose households are better equipped with IT devices are also more likely to use the Internet. At the same time, the availability of traditional appliances has the opposite effect, which implies that the "workaholic" life-style, which characterizes the information society (Almási 2002), does not require the "blenderization" of households. Networks, which are expected to gain even more importance in the future, also have a positive correlation with Internet use: people who maintain many contacts via telephone, SMS or e-mail are more likely to use the Internet than the average citizen. The likelihood of Internet use increases with decreasing age, but this effect will probably vanish as the digital generation grows up. The number of children living in the household and the level of education completed influence Internet use indirectly, as settlement type and gender do. Unfortunately, the latter two variables, not very significantly but measurably, underline traditional inequalities. There are more Internet users among city-dwellers and men. Although the number of children living in the household shows negative correlation with Internet use through the knowledge and comfort dimensions, it should be noted that it has a positive effect through the equipment dimension. As it has been already pointed out in an article about the digital generation (Csepeli 2003b), children are the heralds of information society: a much higher than average equipment value was found in households with children. Education had the same indirect effect on Internet use in all cases.

The multidimensional space described above is continuously changing. The most visible sign of this change is the day-by-day increase in the number of Internet users. At the Web-site of the Hungarian Ministry of Informatics and Communications an Internet-clock shows the actual number of Internet subscribers and among them the number of those with broadband access.[4] More and more people can have a share of knowledge stored on the Internet, which also means that the gap between users and non-users keeps increasing.

CONCLUSIONS

The end of the twentieth century and the beginning of the twenty-first century was marked by fundamental changes, induced by information technology, in the world, which supports the claim that humankind entered a new age – the Information Age.

The Information Age has redrawn the sociological map of humankind. The boundaries which developed in the modern age are now blurred, and challenges, whether posed by nature or society, have been globalized. A new division has emerged with the arrival of the Information Age. Some groups of humankind, which can join globalization, live on one side of this digital divide, while other groups, which remained within local structures, live on the other side. The difference between these two parts is simultaneously geographical, political, cultural and psychological.

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3 The knowledge dimension consists of familiarity with the terms "broadband" and "dialup", ability to work with an office software package, and former IT training.
4 The software for the Internet-clock was developed by Gergely Balla.

The tracking, description and identification of social changes induced by the Information Age and the prediction of further changes require new, synthetic knowledge, which lacks the disciplinary distinctions characteristic of the modern age.

If sociology intends to keep up with the changes of the man-made world, it has to go through profound transformation. It has to break with its theoretical traditions, its formerly perceived role, methodology, and begin to rewrite its history. It has to become open to exact sciences, incorporating information technology into its apparatus. Training for sociologists, as well as sociological research and the system of institutions, should also be transformed. The dramatic stage of human life has changed, while man remained the same: a curious, insatiable, struggling and animated creature – old wine in a new skin.

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