

**NEW INFORMATION TECHNOLOGIES IN HISTORY:
POSSIBILITIES AND PROSPECTS****I.R.RAFI-ZADE*****Baku State University***

The personal computer caused the appearance of the history of information technology as a separate science. In 1986 a special International Association for History and Computing (AHC) began, uniting presently about 1,000 specialists of this profile from Austria, Germany, Great Britain, Holland, Canada, Italy and other countries. (For information on the Association for History and Computing, please consult the web address <http://www.let.rug.nl/ach>.)

Technological changes, first of all the invention and dissemination of new means of communication, are influencing historical research in two ways. On the one hand, the scope and variety of historical sources are gradually expanding: new types of "materialized" human knowledge are attracting the historian's attention. One of the results of the "computer revolution" is the appearance of a new historical source - "machine-readable data sets". The role and scope of "non-paper" information are rapidly increasing.

On the other hand, methods and skills of historical research, as well as the "métier d'historien" as a whole are also changing. Many historians and especially scholars studying contemporary history try to supplement their experience of working in libraries and archives - traditional depositories of historical information - by using new means of storing, processing and disseminating information - first and foremost different types of information systems and databases.¹

The appearance of so-called "process-produced data"², which are a result of the functioning of state/governmental, social and commercial organizations and structures, and machine-readable data sets, which are created by researchers themselves on the basis of traditional historical sources (archival or printed materials converted into machine-readable form), raises a range of new problems which historians never confronted before.

As a result, problems and methods of investigations changed. Now historians are paying more attention to the analysis of multiformity and regional peculiarities in rural developments, such as different types of household, their evolution and correlation, the influence of old historical traditions and social ties to the contemporary situation in the countryside, the role of small production and farming.

Yet, new research topics need new data. On the one hand, historians are search-

ing for statistical material, aggregated at different levels for multi-aspects-comparison of different regions; on the other hand, growing interest in the economic behavior of individuals and social groups, micro economics, and local history impelled researchers to collect data on individual life history, families history, rural settlements, etc.

The material which has been gradually introduced into historical research (primary statistical data, business correspondence, public opinion polls, etc.) were mainly so-called "mass sources", which, as a rule, require quantitative methods of analysis. Soon it was found out, however, that the collection and computing of such data are extremely difficult and labor-intensive, especially in situations when historians are not adequately equipped with computers, money, and staff. The idea of using machine-readable data sets produced by state, social and commercial institutions appeared. These data sets are much larger than the databases which could be created by historians themselves. They contain unique information about the countryside: hundreds of variables concerning economic, demographic and social aspects of rural development during the last decades. The data cover the whole territory of the country and have different levels of aggregation; that is why it is possible to combine macro-economic analysis with the study of regional features of agriculture and to create different types of agricultural typologies. Because of rather stable methods of data collection and grouping the data are fairly comparable and can be used for both static and dynamic analyses of agrarian relations. And last, but not least, the machine-readable form of data representation greatly facilitates the application of modern computer and information technologies for data storage and processing.

Yet, until now these data have almost not been used by scholars. The possibility of gaining access to such an information "gold mine" in historical research is restricted by many obstacles, both "practical" and "theoretical". The main obstacles are the following: there is no clear, accurate and available information about databases both completed and in progress. The descriptions of databases often follow different patterns and in most cases they are available only to the governmental staff, i.e. the access to information systems is rather difficult. Besides these "technical" or "external" obstacles to "secondary" use of process-produced data there is a complex of "internal" reasons which include different approaches to designing a database and the absence of common standards for data modelling and data representation. All these problems could be and should be the object of historical informatics.

Today a school for "information technologies in history" exists only in several countries of former USSR.

Created in Baku the Centre for the History Information Technologies of Baku State University (1993) was the only one in Transcaucasus region. Its firstly aim is bringing about conditions for the purposeful development of that trend in Azerbaijan.

From 90-th of XX c. they began to develop relations with leading educational and scientific centres in this important sphere of historical science.

First International Meetings on this field took place (with participation of professor Irada Rafi-zade – head of this Center in Baku State University) in the work of XVII International Congress of Historical Sciences in Spain (Madrid, Round Table "History and Computers"). Then at two International conferences, arranged by the international Association "History and Computing" in Austria (January 1982 and August

1983), in Holland (summer 1994 the IX International Congress of the Association "History and Computing" as well as numerous conferences, symposiums, meetings and seminars about the problems of using computers and quantitative methods in historical research in the so-called "middle abroad" - Russia, Ukraine and Belarus.

Establishing in the republic international scientific relations for such extremely complicated and much needed work means obtaining levels of modern scientific standards, Databases and data banks about the historical past and the present day in Azerbaijan are as necessary "as air" not only for specialists in the republic itself but also for everybody outside the republic who is interested in Azerbaijan, in the countries of the FSU and abroad. Of course, such a complicated case requires financial support which is not always provided by internal finances. That is why it is very important to attract the attention of interested specialists and various scientific funds abroad which: a) have accumulated significant experience in the formation of the large-scale databases and data banks; b) are interested in adjusting exchanges of information (of scientific and of social-political character) with the countries of former Soviet Union and Azerbaijan in particular; and c) which is a very important point - have the necessary funds to support such joint projects.

A leading specialist in the field of the history of information, the first President of the International Association "History and Computing", West-German scientist Dr. Manfred Taller visited Baku in May 1994. The visit took place within the frameworks of the program of establishing scientific co-operation between the East and the West in the sphere of creation of data banks and further development of that scientific trend.

As a result of this process first such investigations appeared in Azerbaijan historiography.

Firstly was created in computerized memory the collection of databases of machine-readable data ("POPULATION"). Materials about the census of population issued officially, as well as about 20 projects for sociological research conducted by the state statistical departments of the former USSR over the whole period of its historical existence represent a really rich trove of material for study of the history of the former USSR. This bank can be used by educational and scientific centres within and beyond Azerbaijan.

The bibliographic databank of sources and of research literature on the history of Azerbaijan beginning from the ancient times up to the present days (with a computer and a paper search system on key words, on author, year and place of issue, with indications of the code in all leading libraries of the republic) will be formed in the Centre. A textbook on this subject, which was issued in the republic for the first time, for the University students studying in Azeri language (the authors are I.D. Kovalchenko, L. I. Borodkin, I.R. Rafl-zade) was included the prestigious international bibliographic catalogue of works for use of computers in historical researches (see: "Computerised historical bibliography" London, 1993).

Today one of the most actual problems in the foreign historiography is working out the "artificial intelligence". The first steps in this direction are being taken in the Centre. In a friendly atmosphere, in the "window interfaces" system and in the "Researcher-Computer" dialogue system the system "PEAS-ANTRY" was created on the basis of original material of description of the peasant's family at the end of the nine-

teenth , and the beginning of the twentieth centuries.

The interest in the Azerbaijan countryside is rich traditionally in Azerbaijan historiography. For many centuries, till about the middle of the XX century, Azerbaijan was an agrarian country: most of its population lived in the countryside and agriculture was the base of its economy.

To realize the changes in agrarian development we need precise and detailed information concerning the present situation in the countryside as well as historical traditions and peculiarities of home agriculture. It turned out, however, that, although many books on agrarian relations in Azerbaijan have been published, many issues are still vague and controversial.

Scholars and politicians do not know exactly which social groups and strata exist in the countryside. Are there any contradictions and conflicts among them? Which group does support agrarian reforms and who is against it and why? How productive and efficient is agriculture as a whole and how productive and efficient are the different types of household, first and foremost, the state and private sectors?

The changes in agrarian relations made historians reject many common notions and myths. First, the specific features of rural economy became apparent. Scholars began to study peasantry as a social stratum and even more as "a whole world".

The "PARLIAMENT" data base was also worked out - it is devoted to the problem of parliamentary government in Azerbaijan.

The particulars ("personal sheets") of the people's deputies served as basis for the creation of data base on the number of the members of the last session Supreme Council of the republic of Azerbaijan (in the program package dbase III+). At present they are working on the creation of computer program which will allow the drawing of a "mathematical of each lawgiver on the basis of by name voting. That program will in the future allow the forecasting of outfit votes in the parliament.

The need to solve these problems gave birth to "historical informatics" which is gradually becoming an independent discipline. Yet, in spite of the fact that first works on informatics and computer technologies application in historical research were published more than 20 years ago³ even now the subject of historical informatics is disputable. In our opinion, historical informatics is a way of "computer source study", i.e. a discipline mainly dealing with methods of computer-assisted analysis of historical sources, general principles of their formalization and representation in machine-readable form as well as methodologies of computer and information technologies application in historical research. One of the main characteristics of historical knowledge is its vague and polysemantic terminology; furthermore, fairly few sources are strictly structured sources. As a result, approaches to data processing and computing which have been developed in the Natural Sciences or in the sphere of business and management and which are implemented in standard commercial software cannot be used in the Humanities or should be significantly corrected and modified.

At the same time, historical informatics is not only a sum of technical methods and practical skills for using a computer. At every stage of historical science development the rise of the historians' professional mastery and changes in the "metier d'historien" are followed by the researchers' "self-reflection", their attempts to comprehend the peculiarities of cognition in history. Just as at the beginning of the XX century,

when "classical" source study was accompanied by acute epistemological disputes⁴ the development of historical informatics today revives the interest in traditional issues of philosophy of history, such as correlation of historical facts and historical knowledge, the principal possibility of reconstructing the past in historical research, the degree of objectivity and reliability of our knowledge about the past, or special features of reality reflection in different types of historical sources.⁵ And this is not a speculative discourse: these questions are more a logical consequence of examining concrete historical problems.

Some of these problems we examined in this paper. Its main aim is to draw the historian's attention to machine-readable data sets on agriculture and peasantry of contemporary Russia created outside the historians' community and to demonstrate the possibility of their "secondary" use in historical research. The following issues are discussed: How can historians use databases of state, social and commercial organizations? What are the peculiarities of this kind of information storage and dissemination? What are the conditions of databases access? Are there some differences in the secondary use of process-produced data, especially in comparison with databases created by historians themselves in the process of investigation? What are the possibilities and restrictions of their use in studies on agrarian history?

Analyzing the information possibilities of machine-readable data sets on agrarian relations in contemporary Azerbaijan as well we wanted, on the one hand, to retrace the formation of the historian's new needs for information, the evolution of topics and sources, and, on the other hand, characterize the methods of data collection and representation in machine-readable form.

Throughout the world, "computer literacy" has already become a "second form of literacy". Children in kindergartens and specialists in various fields in the countries of the Western Europe are at home with computers.

The countries of the former Soviet Union have some problems in this sphere, Azerbaijan as well. This is due in part economic reasons, as the Institutes and the specialists of the Academies do not have enough modern computers in comparison to world standards.

At present there is an idea for a joint projects in the area of "electronic" archives, catalogues and data banks.

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**TARİX ELMİNDƏ YENİ İNFORMASIYA
TEKNOLOGİYALARININ İMKANLARI VƏ PERSPEKTİVLƏRİ**

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XÜLASƏ

Elmi biliklərin qanunauyğun qaydada inkişafının nəticəsində bütün dünyada müasir tarix elminin yeni bir elmi istiqaməti «Tarixi informatika» yaranmışdır.

Məqalədə Azərbaycan tarixşünaslığının bu elmi istiqamətdə etdiyi nailiyyətlər, həmçinin gələcəkdə tarix elminin bu müasir elmi istiqamətdə olunan perspektivləri nəzərdən keçirilir.

**НОВЫЕ ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ
В ИСТОРИЧЕСКОЙ НАУКЕ: ВОЗМОЖНОСТИ И ПЕРСПЕКТИВЫ**

И.Р.РАФИ-ЗАДЕ

РЕЗЮМЕ

Автор обращает внимание на те закономерности развития научных знаний, которые вызвали в жизни новое научное направление: «Историческая информатика» во всем мире.

В статье лаконично рассматривается тот путь, который проделала в этом направлении азербайджанская историография, а также оцениваются перспективы дальнейшего развития данного направления современной исторической науки.