

KATERINA NIKOLAOU – IRENE CHRESTOU

## Indices of Published Christian and Byzantine Inscriptions

*An Old Project carried through with New Technologies*

Abstract: This article describes a research project that was launched in the early 1970s and maintained by Byzantinists of the University of Athens; it was readjusted by the introduction of new technologies in the humanities and reached its current form in response to technological developments and the modern-day demands of the historical sciences. It pertains to the recording and utilization of data regarding the international, public, private and religious life of the Byzantines, information that is provided to us by the great number of published (prior to 1992) Greek inscriptions found in regions of the eastern part of the empire (from the fourth to the end of the fifteenth century). The study gives an outline of each inscription's entry—it includes identification data and the inscription's text, fields containing all sorts of information gleaned from the inscription, classified in categories, e.g. personal names, offices/titles, professions, buildings, financial data, technical terms etc.—and highlights the potential for advanced searches in multiple fields of the entry. The aim of the project's leaders is to post the collected and already processed material on the Internet, with the prospect that the database will be fed information in accordance to the progress of research.

In a volume dedicated to epigraphy it would be considered redundant to make even an offhand reference to the value of epigraphy as an autonomous field of research or to its usefulness as a primary source of history. It is common knowledge among historians that the so-called “auxiliary sciences of history” (epigraphy, numismatics, papyrology etc.) are essential tools of research. This is the reason that led a research group of Byzantinists<sup>1</sup> as early as the 1970s to collect and catalogue the published Christian and Byzantine inscriptions, as well as to process their written message. The group's ultimate aim was to compile indices of all data derived from this process that could prove “useful” to historical research and humanities in general. The letter-forms, ornamentation and spatial context of the inscriptions were to be left aside. The present study will describe that particular research project. It will document its planning and aims – both the original ones and their readjustments through time –, as well as describe the methodology that was followed at the beginning and the ways it was modified with the introduction of new technologies in the humanities and social sciences. Finally, the study will define the state of the art in current research, as well as the way the latter has been shaped in response both to technological developments and to the modern demands of historical science.

The project commenced in the early 1970s (1973) under the title “Indices of Published Christian and Byzantine inscriptions.”<sup>2</sup> With regard to methodology, it was decided that first the total of all published epigraphic material, or at least a significant portion of it, was to be collected, followed by the processing of its content. According to the plan, the large number of inscriptions would have offered the opportunity for a fuller perspective of the material and should have allowed the tracing of as much data as possible, which would then be itemized and indexed. It must be noted that the research project was aimed only at the Greek inscriptions of the Christian and Byzantine world (with 1453 and the first decades after the fall of Constantinople serving as *terminus ante quem*). Obviously these came from areas in the eastern part of the

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<sup>1</sup> The project was the initiative of the late Aikaterini Christophilopoulou, professor at the former Chair of Byzantine History in the School of Philosophy of the University of Athens, with the participation of professor emerita Konstantina Mentzou-Meimaridis (then assistant professor at the same Chair) and assistant professor Irene Chrestou (then a teaching assistant). During the course of the project various young researchers and postgraduate students also participated, among them the first author of this paper. After Aikaterini Christophilopoulou retired, supervision of the project passed to Konstantina Mentzou-Meimaridis; the authors of this paper are the project's current supervisors.

<sup>2</sup> During the first ten years no outside funding existed; after that there was a two-year scholarship grant for a researcher from the National Hellenic Research Foundation. Since 1985 the project has been included from time to time in the Research Programs of the University of Athens, thus securing a small grant for the purchase of equipment and consumables, as well as for the salary of usually one research associate or computer programmer.

Empire, i.e. the Balkans, Greece, Asia Minor, Egypt, Syria and Palestine. Greek epigraphy of the Byzantine era is markedly scantier than that of Antiquity (from the eighth century BC to the fourth century AD), yet it presents a satisfactory diversity and abundance of inscribed monuments. Out of these a collection was to be made of inscriptions on hard/non-perishable material (marble, stone) but not of those on frescoes, various objects made of clay, metal, glass, ivory, or on textiles, gems and/or coins.<sup>3</sup> Therefore the project dealt mainly with inscriptions highlighting the diplomatic, public, private and religious life of the Byzantines. Peace treaties or alliances, determinations of borders, laws and decrees, imperial donations, constructions or renovations shed light on the international and public realm, while funerary inscriptions revealed the private space.

Research aimed at locating the inscriptions began by card-indexing various *corpora*, collective works and rare editions. The earliest published collections of inscriptions date back to the sixteenth century, which is a blessing for epigraphy; however, as the starting point for cataloging we selected the work of Ph. LE BAS – W. H. WADDINGTON, *Voyage archéologique en Grèce et en Asie Mineure. III. Inscriptions grecques et latines recueillies en Grèce et en Asie Mineure*. Paris 1870. At the same time, we card-indexed international and Greek academic journals: the standard Byzantine, archaeological, historical and philological ones. The search yielded 150 journal titles, which were thoroughly researched by volume from each date of publication to the year 1982 (that was during the project's initial stage). A special card was designed for use during cataloging that included the following fields: i) the full text of the inscription, ii) the place of origin, iii) the date (if available), iv) the publication date of the monograph/journal in which the inscription was located, v) the author and the title of the book or article, vi) the relevant literature and commentary provided by the aforementioned researcher.

Thus, by 1986 a corpus of roughly 15,000 inscriptions had been compiled. During 1984–1986 the project's second phase was underway, which included sorting the inscriptions by year of publication and locating and recording the data of every inscription, to be published as index tables. These data, as originally determined, covered the greatest possible number of scientific fields to which epigraphy contributes: event-based history, administrative history, social history, economic history, anthroponomastics, linguistics, history of religions etc. As all processing of the material was done by hand, it was impossible to record every single field we wanted on paper from the beginning. The lack of flexibility inherent in this type of work led the research team to create a new type of index card which included: i) proper names (family names, personal names, fathers' and spouses' names), ii) titles and offices (civil, military and ecclesiastical), iii) place, iv) time, v) bibliography and vi) *realia*. This last field recorded all kinds of information an inscription would provide to the researcher. At a later stage this data had to be pigeonholed into new categories, in order to document all the institutions, professions, monuments and buildings of every kind (churches, monasteries, *martyria*, towers, castles), public houses, inns, technical terms referring to buildings, donations, economic data, chronological data, place names etc. At the same time, the inscriptions would be identified using the literature recorded on the original index cards. If there was more than one reading of the indexed data, the differences were to be documented on the processing card in the form of a comment. The material proved to be immense and unwieldy and the venture appeared increasingly impossible! Either the project would have to be redesigned and approachable aims set, or we would have to appeal to a *deus ex machina*. We opted for the latter; something called a personal computer.

Today the connection between the humanities/social studies and computers is not only taken for granted, it is also self-evident. History, archaeology, jurisprudence, anthropology, literature or sociology, all make extensive use of available applications, while databases save scientists and workers a lot of time and effort. The Internet is a researcher's magic world. Resources and tools are so complex and numerous that it has become necessary to group them into a unified system. The proposal for a research infrastructure dedicated to the arts and humanities was formulated in 2005. This was named DARIAH, for *Digital Research Infrastructure for the Arts and Humanities*. Following the *European Strategy Forum on Research Infrastructures* (ESFRI) call for proposals in order to prepare a roadmap for large-scale European research infrastructures,

<sup>3</sup> Cf. the relevant definition of "Greek epigraphy" by M. GUARDUCCI, *Epigrafia Graeca*, I. Rome 1967, 7.

four data centres from the UK, Germany, France and the Netherlands jointly submitted a proposal for DARIAH. Today fourteen European countries and institutions participate in DARIAH as member, observer or cooperating partner.<sup>4</sup>

In the mid-1980s, however, things were vastly different. Scientists were just discovering the numerous uses to which personal computers could be put and, as the cost of a PC was starting to fall, they were beginning to put faith in them, albeit hesitantly at first. Each researcher or research team worked alone, being unaware most of the time whether there were parallel efforts at work in another part of the country or abroad. International congresses were the place to exchange such news, with special sessions dedicated to the so-called *instrumenta studiorum*. Thus it was known that the *TLG* had been founded in 1972, the first effort in the field of humanities to produce a large digital corpus of literary texts. In Greece, many years had to elapse before the publication (in 1997) of *COPIA*, the first Greek-language CD-ROM designed as a history teaching aid and the first multimedia title dedicated to Byzantium worldwide. Back in 1986, Byzantinists (at least those in Greece) still felt uncomfortable without their pen and paper.

Given this awkwardness, and still facing the problems mentioned above, the University of Athens research team appealed to the Department of Computer Engineering and Informatics of the University of Patras. The then director of the Department's Computer Center, Dr. Thanasis Hadzilakos, responded to the request for assistance most willingly and commissioned, as supervisor, a senior student of the Department to write a bachelor's thesis aimed at studying the issues emanating from research into Byzantine inscriptions and devising a computerized solution to those issues.<sup>5</sup>

The thesis in question was essentially a case study on the use of information technology by scholars in the humanities. In this sense, apart from the purely technical aspect, various difficulties had to be surmounted, such as the absence of a common vocabulary. On the one side stood a person fairly experienced in computer programming, with technical training to match her skills, and on the other were scholars who used a specific terminology to discuss their own field, but were only slightly (if at all) familiar with computer science. It took a year to complete the task and all its stages were meticulously documented.

The study was structured into three chapters, each with its own special significance: i) experiences from the meetings, ii) development of the database model and iii) experiences from the training sessions. The chapter titles clearly manifest both the general and specific problems encountered. The programmer's description of what went on between her and the three members of the research team (Mentzou-Meimaris, Chrestou and Nikolaou) during the course of their collaboration was both accurate and to the point. With back-to-back meetings and discussions, the demands to be made of the application about to be set up were defined. These demands had to be modified several times, as it became clear which of those desiderata a PC could cater for and which not. On the one hand, the programmer made an effort to understand (for instance) the distinction between dedicatory inscriptions, which contribute (among other things) to the study of the prosopography of civil and ecclesiastical provincial administration, and funerary inscriptions, which contain a wealth of information (however incomplete) pertaining to issues of demography and tradesmen's associations, and even graffiti, bringing to life before our eyes both political and other passions and bearing witness to the populace's mood swings. On the other hand, the historians had to understand the use of the Enter key and be convinced that the limited abilities of personal computers at the time prevented both the input of an inscription's full text and the use of lower case polytonic fonts in Greek texts!

The application was set up with MS-DOS, using Dbase III type programmers' tools and within the time allotted, in the course of which several mutual concessions were made. The student had to abandon the original ambitious goal of her thesis, train the team members and make them capable of creating an application of their own, should the need arise in the future. As for us, we were forced to accept the fact that matching the inscriptions, which had been one of our primary demands, required the introduction of the whole text of the inscription, and hence a much more powerful and costly computer than a PC was needed. Furthermore, the data input scheme and the expected final product were rigidly structured, with no future

<sup>4</sup> Cf. [http://www.dariah.eu/index.php?option=com\\_content&view=article&id=7&Itemid=119](http://www.dariah.eu/index.php?option=com_content&view=article&id=7&Itemid=119)

<sup>5</sup> M. GIANNAKOPOULOU, Utilization of computers in social sciences. An application into Byzantine historical research. BA thesis, Department of Computer Engineering and Informatics. Patras 1987 (in Greek). The title was formulated by the supervisor.

improvements or additions allowed. Apart from all the above, the main problem – which was communicated to us at the end of our collaboration, upon delivery of the material – was that in order to compile the final 12 indices (proper names, surnames, father's names, nicknames, titles/offices, professions, adjectives, topological data, monuments/buildings, technical terms, donations, chronological terms and financial terms), the whole corpus should have been uploaded. In other words, the application made it impossible for partial results to be extracted, or for separate indices of one or two regions or of the early, middle or late period to be compiled. However, by then we were convinced that the use of PCs was more than necessary in research projects of such calibre and that it was imperative both to understand (however crudely) their potential and to adapt our future aims, as well as to contribute towards making software currently in development or about to be developed more amenable to the demands of the humanities as well. We knew that the application in question, delivered to us on a 5¼-inch floppy disk, accompanied by a manual, would be of great assistance in advancing our research to a certain stage; however, more work would be required to move beyond that stage.

Happily the evolution of technology was (and continues to be) rapid. The widespread use of Macintosh computers (appearing for the first time in 1984), bringing with them a variety of user-friendly polytonic fonts, made it possible for primary sources to be properly cited and led the humanities almost exclusively down that path. In addition, the development of exceptionally user-friendly software, originally in the form of MsFile and then the continuously updated versions of FileMaker and FileMaker Pro allowed people with little experience in computers to plan a database. The aforementioned applications were ideal for successive alterations in the data entry fields. In other words, they facilitated the retroactive modification of a research project's demands without cancelling out the work that had already been done. It was for those reasons, and despite the extra cost of buying new equipment, that the 1987 MS-DOS application was abandoned shortly thereafter and the project entered a new phase.

Due to the small amount of University funding, only covering the cost of a single Macintosh computer, in the early 1990s the two authors of this paper had to configure the database's original index card themselves. Without yet giving up on the prospect of publishing indices, we made an effort to create a user-friendly and accessible database, the use of which could help answer individual questions without the need for the entire project to have reached an end. Besides, the continuing efforts to publish and republish the whole corpus of Greek inscriptions, as well as the fact that excavations keep bringing to light additional epigraphic material, rendered our previous plans unrealistic. Now, for instance, we may at any time seek information as to whether the surviving published epigraphic material attests to the existence of a general by the name of Theodosios who lived or was active on imperial territory in the ninth century. If the answer was in the affirmative, we had the option of seeing the inscription in question and scouring its content for the necessary information. If the result was negative, there was nothing to prevent this from changing in the future, when new material would have been added to the database.

As far as technology was concerned, the prospects opening up before us were highly auspicious. One of the problems we had to deal with (successfully) was the need to type the special symbols used in epigraphic publications, as well as ancient Greek characters that are not found in the modern alphabet (Ϛ, Ϝ, Ϟ, ϟ).

In the 12 years that elapsed, the first index card had to go through several improvements and modifications, parallel to the simultaneous uploading of inscribed texts, the processing of the data contained therein and, from time to time, the card-indexing of collections and journals which had initially ended in the year 1982. In this way the original number of 15,000 entries has risen to about 18,000<sup>6</sup> coming from studies published up to 1992. The current index card contains 39 fields, plus one more with the index number. The first six fields provide the inscription's profile: date (if known), type (dedicatory, funerary or other), place of origin, text, bibliography and editor's comments. The next 33 fields refer to data that may be culled from the inscriptions: names, ethnic names, family names, nicknames, emperors, imperial titles, kings, rulers, military offices, civil offices, ecclesiastical offices, military titles, civil titles, ecclesiastical titles, clergymen, monks,

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<sup>6</sup> This number does not represent the amount of published inscriptions, but that of the publications. Multiple publications of the same inscription appear in the results of individual searches and only in this way is it possible to match the various editions.

ecclesiastical service, professions, architectural terms, burial terms, artistic terms, financial terms, chronological data, topological data, buildings – monuments, donations, vessels, materials – precious metals, circus factions – acclamations, border delineation, terms of immunity, symbols. We ended up with these fields by way of a gradual process and there are no practical obstacles, should the need arise, to adding new fields or splitting an existing one. It should be noted here that, based on the potential of the application (Filemaker), every field is searchable, while there is also the option for combined searches in multiple fields, which provide answers to various queries by researchers.

Given the structure and extent the database had acquired in comparison to the original planning of the 1980s, and with the parallel development in the production of CD-ROMs and DVDs, in the past few years it became evident that the original thought of publishing specific indices was now meaningless. Almost inevitably a new goal was set, originally the production of a DVD, which was later redefined. Posting the database on the Internet was judged to be the solution most profitable to researchers. In its existing form it has already been used by outside researchers who were connected neither to the team that planned and compiled it nor to the University of Athens. Accordingly, we thought it would be useful to make the database accessible to the academic community at large. Once again, however, technological progress came to influence the course of our research, this time placing stumbling blocks in the way.

Unicode fonts now reign supreme in the world of computers and are used almost exclusively both on a personal level and on the Internet. As a result, the True Type fonts for Macintosh that were used to upload polytonic texts into the database are responsible for the work's marginalization and it is imperative that the texts be converted and adapted to a unicode environment, so that there will be none of the disadvantages that plague the Dumbarton Oaks Hagiography Database to this day.<sup>7</sup> Using the right tools, this conversion is possible; however, it requires funding and time.

In its current phase, the continuation and ultimate completion of the project has been taken over by the Laboratory of Digital Recording of the Public and Private Life of the Byzantines (attached to the Department of History and Archaeology of the School of Philosophy, University of Athens). Despite the very real financial problems, the transcription of polytonic texts is already underway, while at the same time post-graduate students continue card-indexing all publications post-dating 1992. The aim is to post the bulk of the material on the internet, with the clear understanding that the database will be updated following the course of research.

However, the proliferation in the electronic publication of monographs, academic journals, collections and even specialized databases is now becoming a problem. Consequently, today more than ever a wider collective effort to document and process the whole corpus of Byzantine inscriptions is a must. Existing individual works, responding to differing and specific demands, may become sources of experience and material. New technologies make it possible for old projects, with proper modifications, to acquire new forms and meet new demands without cancelling out decades' worth of efforts.

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<sup>7</sup> The font used is Greek Oldface, which was created specifically for the database in question.

