



NINO MEGENEISHVILI

Korneli Kekelidze Georgian National
Centre of Manuscripts,
Georgia
ninomegeneishvili@gmail.com

SHORENA TAVADZE

Korneli Kekelidze Georgian National
Centre of Manuscripts,
Georgia
shtavadze@yahoo.com

**THE IMPORTANCE OF ELECTRONIC DOCUMENTATION OF
PHOTO-MICROFILMING
(EXAMPLE OF THE MICROFIRS (TAPES) DEPOSITORY AT THE
NATIONAL MANUSCRIPT CENTER)**

The modern age is characterized by digital technologies and opportunities that are transforming work standards and methodologies. This transformation extends beyond exact sciences, divisional details, and communication fields to encompass cultural and creative work as well as scientific activities.

Digital technologies streamline work processes and eliminate spatial barriers among researchers in different countries. A central information base is established, simplifying access to various professional information and providing an efficient means to coordinate scientists globally.

Intangible cultural heritage serves as unmistakable evidence of a particular nation and ethnos, preserving information not only about the individual ethnos and nation but also about their historical-cultural relations with different countries. The database facilitates the organization of information from different countries into one research landscape.

This global process is unfolding step by step in various countries, including Georgia, which, as one of the world's oldest civilizations and a bearer of rich history and culture, holds a unique position as a historical crossroads. The research of its written monuments extends beyond Georgia, representing a historical value for the world. It's noteworthy that information about written monuments preserved in Georgia occupies a relatively small space in the world's information base. Therefore, develop-

ing digital humanities in Georgia, particularly creating a digital database for written sources stored in Georgian repositories, is crucial. In this regard, the National Center of Manuscripts stands out as one of the leading organizations in Georgia.

The modern experience with language and cultural monuments laid the foundation for a new discipline – digital humanities, which now has its own theoretical basis (main principles and methods of digital documentation and archiving) and a comprehensive program framework, encompassing resource acquisition (material recording), accounting (registration), technical processing (methodological and technological means of digitization), storage (archiving), and ongoing maintenance (protection).

In the context of digital humanities, the significance of written sources and scientific publications has expanded, now termed “dynamic scientific documents,” combining not only text but also multimedia, metadata, dynamic environments, and the language of Internet communication in an academic format (Tandashvili, 2016).

Digital documenting of manuscripts in Georgia has its own historical development. As soon as manuscripts were collected, efforts were initiated to develop mechanisms and methodologies for their preservation. One preventive measure was the creation of photo-microfilming of manuscripts, ensuring their conservation. Examples include the manuscripts photographed by Dimitri Ermakov and Aleksandre Roinashvili on the initiative of Ekvtime Takaishvili, including the creation of photo samples of the Adish Gospel. The practice of photo-microfilming manuscripts, negatives, and slides gradually expanded on a larger scale. After the Second World War, all manuscripts in the museum’s manuscript department were photo-fixed. Consequently, shortly after the establishment of the Institute of Manuscripts in 1964, all written samples preserved there were photographed and microfilmed to protect manuscripts and locate copies of Georgian manuscripts preserved in various funds abroad. This effort resulted in the creation of a photo-microfilming repository. The old standard of manuscript photofixation persisted, with few exceptions, until the introduction of the new, modern digitization methodology.

In 1956, the Academy of Sciences library acquired microfilms of the Sinaitic and Jerusalem collections of Georgian manuscripts, providing copies to the Institute of Manuscripts. In 1981, director G. Pataraya and researcher A. Mikaberidze filmed the Athos collection of Georgian manuscripts (72 items), delivering the tapes to the Library and Institute of Manuscripts at the State University, Academy of Sciences. Consequently, the center now preserves a micro-photo collection of manuscripts from the libraries of Sinai, Athos, and Jerusalem.

The photo-microfiring repository gradually expanded with microfilms

of both Georgian and foreign manuscripts preserved abroad and in various repositories within Georgia. Currently, the collection comprises approximately 40 different funds, including those from Paris and Baudelaire National Libraries, the Vatican, the University of Strasbourg, Vienna, Harvard, Graz, and others worldwide. Additionally, it contains photo-micrographs of Georgian manuscripts from different regions of Georgia (Kutaisi, Mestia, Zugdidi, Batumi, Telavi, Akhaltsikhe, Gori), many of which hold the value of a manuscript book.

It's noteworthy that the microfilm fund encompasses a collection of foreign language manuscripts in the National Manuscript Center, records of business trips and expeditions on a separate tape, microfilms of wills, microfilms of manuscripts from private collections, 566 units of photo-microfiche of epigraphic samples, and a rich collection of negatives made on various materials (tapes, slides, glasses).

The photo-micro storage includes up to 2000 photo-microfiches of written sources from the Central State Military Historical Archive of Russia, the Archive of Foreign Policy of Russia, and the Central Fund of Old Acts. Of particular importance is a photo copy of the four chapters of Adishi preserved in the Museum of Local Lore in Svaneti (Georgia), taken by D. Ermakov, utilizing precious metal salts.

Through extensive efforts, nearly all microfilms of manuscripts preserved in the National Center of Manuscripts are now stored in the photo-microfiring storage. This includes microtapes of historical documents Ad-2297, Sd-5514, Hd-15108, Qd-10944; Microtapes of Georgian manuscripts (with only slight gaps in the Q fund) - tapes A-1734, S-5375, H-3265, Q-1480, Q-1519, Q-1566. Additionally, Ottoman-11, Arabic-7 manuscripts and 60 historical documents, Persian-9 manuscripts and 13 historical documents, Armenian-1, Greek-34, Russian-4 manuscript tapes are preserved. Varia-1 is set aside as a separate fund, housing tapes of manuscripts transcribed in different languages. The micro-tapes fund contains 4 tapes of wills and letters, 1 of business trips and expeditions, and 9 tapes from private individuals' collections.

Concerning the catalog of microfilms of public figures, it includes microfilms of G. Javakhishvili - 216, Tsereteli - about 500, Tumanishvili - 212, G. Bochoridze - 68, L. Andronikashvili-100, M. Tumanishvili-100, G. Tumanishvili-100, Al. Bishop's - 1867, K. Sadzaglishvili - 1615, M. Kelengeridze - 253, Pl. Yoseliani - 142, Marie Broses - 167, various - 527, V. Karbelashvili - 881, Al. Kazbegi 329, I. Davitashvili - 118, D. Megvinetukhutsesi - 56, P. Umikashvili - 42, Ex. Ninoshvili - 30, Iv. Javakhishvili - 1163, I. Songhulashvili - 452, Gr. Tsereteli-3635, Ak. Tsereteli-873, Ex. Takaishvili - 2200, Il. Nakashidze-442, Gr. Orbeliani - 717, G. Tsereteli - 587, Anastasia Tumanishvili - 962, Rafiel Eristavi - 1097, D. Bakradze - 182, S. Meskhi - 89, Weidenbaum - 1973, Vazha-Pshavela - 262, Il. Chavchavadze - 1052, D. Kifiani - 1956, Al.

Khakhanashvili - 882, T. Jordania - 824, Jorjadze - 58, Mich. Machablis - 1626, Al. Jabadaris-45, K. Smirnov - 156, I. Eliashvili - 220, K. Kekelidze - 949, Meskishvili - 389, T. Kikvidze - 43, K. Tsintsadze - 312, D. Tapes of Muskhelishvili - 135, Gogebashvili - 640 foundations.

The National Center of Manuscripts stands as one of the world's leading scientific institutions for the research of written monuments. In addition to manuscript protection, it conducts fundamental research and source study, creates archeographic descriptions, publishes works, engages in preventive conservation, conservation-restoration, provides relevant recommendations, and systematically monitors repositories. Digitizing the micro tapes created in the last century for manuscript protection will enable a comprehensive comparison of the manuscript's condition from its initial digitization to the present day.

One of the crucial functions of the National Center for Manuscripts is the digitization of written monuments, a process that, due to its complexity, spans decades to complete. In the digital age, not only the content of historical events but also the visualization of information has become essential, serving as one of the most common forms of communication. Data visualization is widely applied in scientific and statistical research, data mining, instructional design, informational reporting, and analytical reviews.

Despite Georgia's rich historical records extending beyond its borders, the digital space of the modern world lacks comprehensive documentation of this ancient civilization. In the contemporary era, the use of cutting-edge technologies for creating and analyzing voluminous data is a defining characteristic. The digital realm is teeming with billions of digital cultural artifacts in interactive media, and Digital Humanities has developed various technological tools and research methods to obtain quantitative indicators and qualitative findings, as discussed in numerous reports, articles, and books.

Digital humanitarianism emerged during the information age, leveraging electronic communication and the Internet to minimize the time required to find primary data and assimilate humanitarian information. The digitization of cultural and humanities information has accelerated the exchange of ideas and data.

The increasing number of digital representations of literary texts and cultural phenomena, coupled with advancements in digital humanities tools and research methods, underscores the importance of adding a digital version of Georgian handwritten monuments to the digital database. This addition will facilitate and simplify fundamental, relatively analytical scientific research.

In the modern world, humanitarian science, considered an irrational

science, is perceived as having less appeal among young people, contributing to its categorization as a “dying” science. The high imbalance between rational desires and the technical capabilities within areas of interest, particularly humanitarian science, is a key factor. A simplified workspace and opportunities will help strike a balance between rational desires, professional interest, and the aspirations of young people.

The solution to the crisis lies in popularizing philological science, as philology represents the history of culture itself and boasts high critical capacity in studying the social history of documents. Digital humanities, where philology holds a central position as the “fundamental science of human memory” and the “general science” of literature, texts, serves as a significant contributor. The written monuments preserved in the National Center of Manuscripts of Georgia span a broad chronological framework (V-XX centuries), exhibit thematic diversity, and are rich in artifacts preserved in different languages (Tandashvili, 2020).

In the modern era, within the context of digital humanities, the meaning of written sources and scientific publications has expanded, labeled as “dynamic scientific documents.” These documents combine not only text but also multimedia, metadata, dynamic environments, and the language of internet communication in an academic format.

Although the interest of scientific research centers and researchers in the sources protected in the National Center of Manuscripts is high, the relevant citation base does not meet international, modern requirements. It is imperative to create a multi-digital information network, resulting in an extensive source base with bibliographic appendices, descriptions, and research information of high standards preserved in the photo-micro storage.

The possibilities of digital humanities in the modern landscape encompass diverse methods of implementation, including conferences, thematic magazines, and summer schools (Khalvashi, 2018).

In pursuit of the goals of modern digital humanitarianism, the following features should be considered:

General Information: This encompasses the ranking of handwritten books, historical documents, and personal archival funds of public figures.

Sectoral Grouping: A simplified filtering system for thematically and genre-wise diverse materials, including monuments of both secular and religious content. This categorization is based on funds (A, S, H, Q, Ad, Sd, Hd, Qd, personal archival funds of public figures) preserved in Khets.

Chronological Grouping: The material preserved in Khets spans the chronological framework of the V-XX centuries.

According to Writing: Written monuments are found in all three forms of Georgian writing, as well as manuscripts made in foreign languages.

Digital Humanities Integration: Digital humanities, being an interdisciplinary field, requires researchers to visualize both written texts and create an information base of critical digital editions. This also involves incorporating scientific publications related to written sources.

The utilization of microtapes in preserving written and printed collections is a notable aspect of information storage. Initially used in the banking system, libraries adopted this method. Microtapes come in different types:

Cellulose Nitrate: Initially used for motion pictures, government records, and studio photographic film, this type was discontinued due to flammability and rapid deterioration. Safer film stocks, such as cellulose acetate and cellulose triacetate, were developed in the 1950s.

Acetate: Used from the 1950s to the mid-1980s, acetate film has a life expectancy of one hundred years if properly prepared and stored. However, it is susceptible to damage from changes in temperature and humidity, leading to vinegar syndrome.

Polyester: Almost exclusively used for microfilm production today, polyester film stock is chemically stable and durable. It has a lifespan of five hundred years under proper protection.

Microfilms preserved in Khets storage were taken in the 60s-80s using high-quality polyester films, slides, and 2-3 mm glass for preserving written monuments. The resolution of these microfilms, with technical parameters corresponding to micrat 200 and micrat 300 (300 lines per 1 millimeter), ensured high resolution. Precious crystals were used in the creation of films during the photofixation of cultural heritage, guaranteeing long-term protection under appropriate climate control conditions. Positive and negative types of black-and-white microtapes were produced, with sizes ranging from 35 mm to rarely 60 mm. Digitizing microtapes and placing them on a server requires knowledge of relevant technologies (Cole, 2003).

It is crucial to establish a robust mechanism for the protection of microfilms. Microfilm and microfiche should be stored in alkaline neutral buffer boxes, preferably in stainless steel closed cabinets rather than wooden ones, in a location shielded from sunlight and harmful ultraviolet radiation. The optimal temperature for safeguarding black and white films should not exceed 17 °C, with recommended humidity around 50% ±5%. Regular cleaning of inventory in storage and use areas is essential, as dust poses a known risk of causing scratches on microfilms.

During the Soviet period and beyond, insufficient attention was given to the protection of microfilms. Climate control measures necessary for their preservation were not determined, and standard limits for humidity and temperature were not established. Passports indicating their condition were not created, and an information register about them was

lacking, hindering preventive conservation of microfilms. Consequently, preventive conservation measures essential for their protection become paramount. A restorer should assess the condition of microfilms, determine the degree of damage in case of any, and provide necessary recommendations for conservation. Preventive conservation efforts should be undertaken as much as possible. Printing out the microfilms of those funds whose photocopies are not stored in the photo storage of the National Center of Manuscripts is advisable.

The digitization of microfilms will significantly contribute to the creation of a robust digital library of written sources. This digital library will enhance access to a wealth of information for both professionals and interested readers. In the contemporary era, the development of digital humanities approaches scientific research from a new angle. The integration of scientific and technological directions will not only protect the material stored in the center from damage and destruction but will also provide access to researchers without territorial distance constraints, addressing one of the main challenges faced by any organization possessing a collection of a scientific nature.

REFERENCES:

- Cousin, Manana. 2016. Digital documentation of language, BSU,
- Cousin, Manana. 2020. Modern methods and tools of documenting language and culture, Vol. 2020
- Khalvashi, Ramaz. 2018. Introduction to Digital Humanities, Batumi.
- Timothy, Cole, 2003. "Using OAI-PMH to Aggregate Metadata Describing Cultural Heritage Resources," Presented at the ALA/CLA Annual Conference (June 2003, Toronto, Canada). Available: http://dli.grainger.uiuc.edu/publications/twcole/ala2003oai/ALA2003_O.
<https://guides.lib.uw.edu/c.php?g=342245&p=2305093>