

Peter Pavel Klasinc¹

ARCHIVISTICS, ARCHIVAL SCIENCE AND ARTIFICIAL INTELLIGENCE

Abstract

Purpose: *Today, archivistics is defined as an independent, academic, multidisciplinary, and interdisciplinary science. Archival theory and practice, and with it archivistics and archival science, follow the changes introduced by new information technologies. These changes also affect the field of archival sciences by being introduced into research tasks, into digitization systems and through attempts to introduce artificial intelligence into archival science.*

Method/approach: *The author used a descriptive method for a historical review of the definitions of the terms archivistics and archival science, and conducted an experiment on how these terms are defined by artificial intelligence on three different platforms (Chat GPT, You.com, Copilot for Microsoft 365). He analysed the results of the experiment and compared the comparative method with established definitions over time.*

Results: *The results of the experiment showed that modern archival theory and practice is much more complex than it was decades ago. Archival science is undoubtedly interdisciplinary and multidisciplinary, as well as academic. It is connected with other sciences, which indirectly and directly raise the reputation of archives and archival services among creators.*

Conclusions/findings: *In the context of modern terminology solutions, one should clearly separate archivistics as a set of practical knowledge that must be known for successful implementation of complex procedures in the field of archival activity from archival science, which investigates, defines, or tests many theoretical, practical, and other research questions, and which may also be limited to international, national and other existing or planned frameworks.*

Keywords: *archivistics, archival theory and practice, archival science, artificial intelligence, terminology.*

1 Assoc. prof. dr. Peter Pavel Klasinc, Director of the International Institute of Archival Sciences Trieste-Maribor in Trieste (Italy). Dean of the study programs of Archival sciences at AMEU ECM, peter.klasinc@almamater.si, +386 41 673 785.

1. INTRODUCTION

Archival activity, and with it the entire archival theory and practice, is in a whirlwind, which requires archival professionals to consider many professional considerations and thus also updated or new archival-terminological solutions. All this has a significant impact on the future of archival activity in the broadest sense of the word, and in this context also on the development of the concept of *archival science*, including the mission of archival institutions, archival services for creators, the social status of archival professionals, forms, and quantities of preserved archival material and its general accessibility and universal applicability. In this connection, many new fundamental questions arise in addition to the existing ones, among other things the universal definition of the concept of *archival science* in the context of the modern information society and related modern information-technological conditions. These and similar questions are becoming very relevant, especially if the answers to them are generated with the help of artificial intelligence or generative artificial intelligence (for more, see STRIP Tovarne Prihodnosti, 2023).

The contemporary archival challenges are also closely related to the current question of the emergence of digitization and thus the automation of archival professional procedures with the most modern means, which can influence the development of efforts to intensively apply the most modern archival expertise, especially in the management system of archival and documentary material. The answer to this question is not clear-cut, therefore the understanding and quantification of these influences in the field of archival theory and practice has consequences both in the segment of the design and management of archival material and documentary material in the archival services of the creators and, consequently, also on the valorisation, acquisition, preservation, and use of archival material in the individual archives.

The complexity of the problems and related solutions arising from digitization processes throughout the entire life cycle of documents requires more complex and clearly defined methods of professional editing work in archives (Novak, 2021). Related to this are professional work processes

in competent archives, as well as in archival services. At the same time, in those segments where digitization is already established, we perceive new archival professional challenges that require adjusted or even new research, new or adapted work methods, revised terminological solutions, etc., which can also directly affect the definition of the concept of *archival science*.

2. GENERAL DEFINITIONS OF THE TERM ARCHIVAL SCIENCE

Analysing the definition of the term *archivistics*, which in some cases is a synonym for the term *archival science*, while in others, it is used for the entire routine of archival professional work in the field of archival activity, we can conclude that at first glance the two do not differ very much. From a methodological point of view, they try to define the object and goals of archival activity, and in doing so, they differ in the focus of defining the theoretical and practical approach in relation to the environment in which the activity is carried out. Differences between individual definitions can be detected in terms of different methodological approaches to defining and thus also understanding the concept in time and space, and in the context of technological progress (Melik & Jeraj, 2011).

Vilfan and Žontar (1973, 16) define *archivistics* as a science that studies all the work performed by archives in order to preserve archival material and make it serve its purpose. Due to the pragmatic approach to this definition of the term, they further defined and divided archival studies into 4 subsystems: archivistics in the narrower sense of the word, archival technique, history of archives and archival jurisprudence (Vilfan & Žontar, 1973, 16–17). By defining the term *archivistics*, they actually defined methods and goals, which are limited only to the operations of archives, as it was known in the late 60s and early 70s of the 20th century.

Žontar (1984, 12) defined the term somewhat differently, namely that the archivistics is the science of archival material. According to him, *archival science* is counted among the social sciences. He furthermore pointed out *archivistics* as a young science that began to take shape in the 19th century, but in Slovenia, it took its final shape only in the second half of the 20th

century (Žontar, 1984, 19). *Archivistics*, according to this definition, encompassed archival professional activities in archives, as well as with creators. In this context, the use of the concept of *science* was also important, because it defines both practical archival professional activities for carrying out archival activity and also archival theoretical research.

Kožar and Balta (2004, 135) defined *archivistics* as a social science that studies the development of the methodology of professional work in archival activity, the consolidation of professional and scientific principles, regulations, and standards in relation to archival material as the object of its work from its creation to evaluation of all forms of its values. The authors place *archivistics* within the framework of social sciences. Based on this definition, we can conclude that research in its subject area has found its place in the academic environment and that systematic studies of archival content have also begun to be carried out at all three study cycles at various universities and higher education institutions. The described trends can be observed in American archival theory and practice (Duranti & Franks, 2015, 84–86), as well as in Europe, e.g. Italy (Tato, 2013).

In Slovenia, the last decade has created what is necessary for a new definition of *archivistics* in the broadest sense: preparation of materials for the accreditation of study programs Archival studies at the first Bologna cycle; Archival sciences and records management at the 2nd Bologna cycle, and Archival sciences at the 3rd Bologna cycle at Alma Mater Europaea - European Center Maribor. In this context, *archivistics* has been defined as an independent, academic, multidisciplinary, and interdisciplinary science. In relation to the definition of the concept, the problem of placing it into broader classifications within the field of science and research also arose. Klasinc claims (2019) that it is therefore still an unpleasant surprise that we cannot decide whether archivistics is placed in the field of social sciences or natural sciences. Archivistics must be embedded in both areas due to the comprehensiveness and multidisciplinary and interdisciplinary, which is reflected in the archival material. In the systemization segment, the definition was already written down and more precisely justified by Kožar and Blata (2004) and more than 20 years earlier also by Jože Žontar (1984).



Picture 1: Brochures of the archival study programme at 2nd and 3rd Bologna cycle Alma Mater Europaea – ECM (AMEU, 2023; AMEU 2023a)

In the Dictionary of Archival Terminology maintained by the American Archival Society on its website, under the term *archivistics* there is a pointer to *archival sciences* (SAA, 2023a). Under the term *archival science*, it is written that it is a systematic body of theory that supports the practice of identifying, acquiring, authenticating, preserving, and providing access to records of lasting value (SAA, 2023b). Equating the concepts of archivistics with the concept of archival science can represent a semantic problem in the sense that there is no clear demarcation between direct archival professional and archival scientific-research activities, but all of these dynamically flow into each other. In practice, activities on and about archival contents in the context of archival activities take place both at the level of basic and applied research and their implementation. All of this is related to the training of archival professionals both within archival institutions and at the level of universities and higher education institutions.

A closer look at the use of the term *archival science* in American theory and practice shows that the term was already used in the period between the two wars. Holms (1938, 171-185) was one of the first to use it in the paper "*The Evaluation and Preservation of Business Archives*". By 1944, the term was used in at least 4 archival professional papers. Then again in 1963 and 1982 in one contribution each. We can trace a more intensive use of this term in the period from 1992 to the most recent time. The problem is that the definition itself does not indicate in which case the term is used as equivalent to the term *archivistics* and when as *archival science*. Thus, exactly the opposite of the European tradition of using this term.

In exactly the same way as the term is defined in the Dictionary of Archives Terminology (SAA, 2023b), it is also defined in the Multilingual Archival Terminology (ICA, s. d.). The same definition of the term can also be found in the terminological database, which was built as part of the InterPARES project (s. d.).

Košir (2002) draws attention to the legal aspects of the definition and use of the term *archivistics* and consequently also the term *archival science*, which shows the development of archival science over time and space and the related problems of perception of the term *archival science* at the international level. In doing so, he points out that the development of archival science itself is not complete (Košir, 2002), as a result of which we can understand that the definition of this term is in permanent development and upgrading. This depends on the general technological, social, political, and other developments, as indicated by many practical solutions to definitions throughout history (Košir, 2002; Melik & Jeraj, 2011; Duranti & Franks, 2015; Klasinc 2019).

Looking at a longer period of time, as well as according to specific cultural and geographical areas or according to different views on the definition of the term *archival science*, the term changes or adapts to new facts, knowledge, or technological aspects. From this point of view, there is no doubt that the concept is dynamic from a substantive point of view, and it is impossible to universally define it at the current stage of archival science. From this comes the thesis that the definition of the concept is adjusted in

the face of greater technological and social improvements and conditions such as, for example, intensive digitization of archival material, which began to develop more widely in Europe in the 1980s. This fact can also be proven through definitions (Košir, 2002; Melik & Jeraj, 2011; Duranti & Franks, 2015; Klasinc 2019).

The theoretical and also the practical question arises of when is the right time to change the content of the definition of the subject concept. As an example, let us cite the change in archival doctrine and, consequently, the adjustment of the definition of archival science in the era of the information society. For example, regarding the relationship between information and archival science, *"we cannot talk about a specific information science within archival science, but only that archival science in its research introduces elements of information science into archival theory and practice, which enables archival professional tasks to be carried out on a high professional basis, but always on the roots and original solutions of archival theory and practice"* (Klasinc, 2003). This finding also suggests that prerequisites must be given for changes in the definition of the subject concept. The terminological solution itself must actually be established in the archival professional and scientific environment.

Today, it seems that modern archival theory and practice is facing new developments and thus also new challenges of redefining archival science. This cycle is directly defined by generative artificial intelligence, and indirectly by other levels of artificial intelligence such as robotics, entity recognition processing, smart cities, etc. In the continuation of this research, we checked the hypothesis whether generative artificial intelligence at the current stage of development defines the concept of archival science in such a way that it corresponds to generally accepted definitions.

3. ARCHIVAL SCIENCE IN THE LIGHT OF THE DEFINITION OF ARTIFICIAL INTELLIGENCE

In the context of archival science, we can define the solutions collectively known as Artificial Intelligence as those that help in generating and managing archival content, context and other relations established in archi-

val material, or use artificial intelligence for many activities in the field of management of archival institutions and archival services among the creators and thus also of the archival material. For the purposes of this paper, we set the same requirement to three different generative artificial intelligence platforms: *Define the term archival science*. Due to the broader reach of the inquiry and thus the assumption of objective results, a simple question was asked: *provide me the definition of the term archival science*.

Based on the above request, Copilot for Microsoft 365 gave the following definition of archival science: *"Archival science is a systematic body of theory that supports the practice of identifying, acquiring, authenticating, preserving, and providing access to records of continuing value. Records can be in various formats, such as documents, recordings, photographs, and data storage devices. Archival science emerged from diplomacy, the critical analysis of documents, and is taught in colleges and universities, usually under the umbrella of Information Science or paired with a history program"* (Microsoft, 2023).

A re-posted query with the same phrase gave a meaningfully comparable result, but the individual phrases and relations to the contents are positioned slightly differently. The second created definition reads as follows: *"Archival science is a field of study that deals with the creation and management of archives. Archives are collections of documents, recordings, photographs, and other materials that have lasting value and significance. Archival science aims to ensure the authenticity, preservation, and accessibility of archival records for various purposes and users. Archival science draws on theories and methods from disciplines such as history, information science, and diplomacy"* (Microsoft, 2023).

In response to the same question, Chat GPT defined archival science as *"Archival science, also known as archivistics, is the interdisciplinary field of study and practice concerned with the principles and methods of identifying, acquiring, organizing, preserving, and providing access to records and archives of enduring value. Archives encompass a wide range of materials, including documents, recordings, photographs, and digital records. Archival science aims to ensure the authenticity, reliability, and accessibility of records throughout their lifecycle, contributing to the preservation of cultural, historical, administrative,*

and legal memory. Archivists, professionals in archival science, play a pivotal role in managing and safeguarding records, facilitating research, and promoting accountability and transparency within society. The discipline often incorporates elements of information science, history, and cultural heritage studies" (Open AI, 2023).

Chat GPT's generative artificial intelligence created a different answer to the same question. The content of the second answer is *"Archival science, also known as archivistics, is the field of study and practice that involves the systematic management, organization, preservation, and accessibility of records and archives. It encompasses the principles and methods related to the identification, acquisition, appraisal, arrangement, description, and dissemination of records, regardless of their format (physical or digital). Archival science aims to ensure the long-term preservation of materials with enduring value, facilitating access for researchers, scholars, and the public. The discipline is integral to the preservation of cultural heritage, institutional memory, and historical documentation. Archivists, professionals in the field of archival science, play a key role in maintaining and providing access to the records that contribute to our understanding of the past" (Open AI, 2023).*

On the you.com platform, the system answers the same question that *"Archival science is a systematic body of theory and practice that supports the identification, acquisition, authentication, preservation, and provision of access to records and archives. It involves the management and preservation of records, both physical and digital, to ensure their long-term accessibility and usability. Archival science encompasses various activities, including the arrangement and description of records, the development and implementation of preservation strategies, the establishment of policies and procedures for records management, and the provision of reference services to users seeking access to archival materials.*

Archival science plays a crucial role in preserving and providing access to historical records, government documents, organizational records, and other valuable materials that document human activities and societal memory.

Archival science is closely related to other disciplines such as library science, information science, and records management. However, it has its own distinct

focus on the unique challenges and requirements of managing and preserving records and archives.

Archival science is essential for ensuring the integrity, authenticity, and long-term preservation of records, as well as facilitating their use for research, education, and cultural heritage purposes» (you.com, 2023).

When the same question was asked again on the you.com platform, the system generated the same answer as for the first question.

If we summarize the results of the above experiment, we can conclude that the generative answers are more about different descriptions of archival activity and not so much about the definitions of *archival science* itself. The communication gap, which is created in this way, arises due to the insufficient differentiation of the contents of the concepts archivistics, archival science, archiving, as well as archival theory and practice. This is precisely why the definitions of the concept of archival science, which are created by various systems that operate on the basis of generative artificial intelligence, can represent a good starting point for creating a more comprehensive definition of the concept of archival science, which, despite technological support, must still be created by humans.

4. CONCLUSION

Contemporary archival theory and practice is much more complex than it was decades ago. Its complexity is not only reflected in the quantity and forms of archival material, or in the applied methods of archival professional and research work, but above all in the archival terminological solutions. These must be very clearly defined; preferably unique, and above all standardized at the international level. The requirement is all the more relevant, when generative artificial intelligence becomes even more advanced, and which will be used comprehensively and intensively by archival professionals in professional, educational and research work.

In the context of modern terminological solutions, *archivistics* should be clearly separated as a set of practical skills that must be known for the successful implementation of complex procedures in the field of archival activ-

ity, from *archival science*, which investigates, defines, or tests many theoretical, practical, and other research questions and, which may also be limited to international, national, and other existing or planned frameworks.

Archival science is undoubtedly interdisciplinary and multidisciplinary as well as academic. It is connected to other sciences, which indirectly and directly raise the reputation of archives and archival services among creators.

Many of them are closely related to the preservation and use of archival material. We especially highlight history, art history, historical geography, law, medicine, etc. We furthermore also take into account archival auxiliary sciences such as diplomacy, palaeography, sphragistics, heraldry, vexillology, archeography, genealogy, chronology, information and library sciences, records management, etc.

On the practical level, these relations are shaped differently and reach different intensities of expression in a certain time and space in different contexts of processing and usage of archival material. It is also known that the results of professional archival work are generally defined through preserved and accessible archival material, which is organized, catalogued and thus useful to the general public. This is precisely why we must define *archivistics* at the archival operational level in a slightly different way than *archival science* with its scientific research methods, connections and networks, research projects, scientific journals and, last but not least, the writing style of appropriate scientific or popular texts, etc.

The clarity and consistent use of modern concepts from the field of archival sciences and activities of archives and archival services among creators will certainly become the basis for adequate definitions of the contents of archival professional concepts, including *archivistics*, *archival science*, *archival theory and practice*, of course also with the help of generative artificial intelligence.

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