

Digitization and Protection of Cultural Heritage in Crises and Conflicts

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Abstract. The research focuses on digitization as a mechanism to protect cultural heritage in crisis and conflict situations, emphasizing technologies such as 3D scanning and virtual reality. The application of these methods in projects such as CyArk, Anqa and The Aleppo Project illustrates their potential to protect priceless cultural assets, highlighting the importance of global cooperation and innovation in technology as key factors in protecting cultural heritage for future generations.

Keywords: Digitization, Conflicts, Crises, Cultural Heritage, Protection.

1 Introduction

In times of globalization and technological advancement, cultural heritage remains a fundamental pillar of human identity and diversity. From ancient architectural wonders to priceless manuscripts and art, cultural heritage serves as a bridge between the past and the present, passing down knowledge, traditions and values across generations. Despite its undeniable value, cultural heritage is often extremely vulnerable in the face of various crises and conflicts. The destruction of historical sites, cultural objects and artefacts as a result of war, terrorism, natural disasters or neglect is a tragic reality that puts cultural heritage at risk. In response to these challenges, digitization has emerged as a powerful tool for preservation and protection. The process of converting cultural objects and information into a digital format offers the opportunity not only for sustainable storage and easy access, but also for the creation of detailed replicas capable of surviving even if the originals are lost or destroyed. The use of modern technologies such as 3D scanning and virtual reality to create accessible online digital copies of cul-

tural objects demonstrates how digitization can effectively contribute to the preservation of cultural heritage in conditions of uncertainty. By presenting successful projects such as CyArk, Anqa and The Aleppo Project, the present study highlights the importance of global cooperation and technological innovation as key factors in the protection of cultural heritage for future generations.

2 Exposition of the Investigation

The research is based on an analysis of publications that cover the topics of digitization and protection of cultural heritage in the context of crises and conflicts. The analysis aims to understand the general trends, challenges and opportunities that are identified in the existing literature and their application for the protection of cultural heritage. The methodology of the present study is focused on a qualitative analysis of the selected literature, with the aim of identifying, analyzing and summarizing the main trends, approaches and conclusions regarding the digitization and protection of cultural heritage in times of crises and conflicts. This analytical approach facilitates the evaluation of existing methods and technologies, as well as the identification of areas for future development and research.

In the context of global changes, crises and conflicts pose significant risks to cultural heritage, exposing it to unprecedented dangers. The concept of “crisis situation” contains various aspects that are grouped on the basis of specific signs. For example, by nature, crisis situations are military and non-military, by time – permanent and temporary, by area of interaction of armed conflicts – terrorist threats, economic, socio-economic, informational, environmental, demographic, political, etc. (Yotova, 2016). A conflict is a special type of relationship of opposition between the interests of two or more countries, political or other groupings, based on objective and subjective contradictions, different in character and nature. Revealing the regularities for the emergence and development of conflicts is rather complicated. Conflicts are difficult to classify. Each of them is unique and it arises, proceeds and is resolved in specific conditions inherent only to it (Neikova, 2008).

Within the framework of global efforts to protect cultural heritage, the definition of the term “culture” provided by United Nations Educational, Scientific and Cultural Organization (UNESCO) in the Universal Declaration on Cultural Diversity takes centre stage (UNESCO, 2001). This statement emphasizes that culture is “a set of distinctive spiritual, material, intellectual and emotional features of society or a social group, and that it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs”. Thus UNESCO not only brings attention to the tangible and intangible aspects of culture, but also to its role in social life, including the way people interact with each other and with the world around them. This definition is particularly important for the preservation of cultural heritage, as it emphasizes the need for a comprehensive approach to its protection. It is a reminder that culture transcends the boundaries of physical objects and extends to the deep connections that exist between people and their traditions, beliefs and lifestyle. In this sense, the protection of culture requires a commitment not only to the preservation of cultural monuments and

works of art, but also to the maintenance of living cultural practices and the promotion of cultural diversity. The importance of this declaration and its definition of culture is reflected in its wide acceptance by countries around the world, which have committed themselves to protecting and promoting cultural diversity within their borders and internationally. This commitment supports the development and implementation of policies and programs that aim not only to preserve cultural heritage, but also to understand and appreciate it as a major source of social and economic development.

Underlying international efforts to protect cultural heritage are important definitions and distinctions set out in key documents such as the 1972 Convention concerning the Protection of the World Cultural and Natural Heritage. According to this convention, “cultural heritage” covers three main categories of objects: monuments, ensembles and places of interest, each of them representing a particular value from the point of view of history, art or science. This distinction emphasizes the universal value of cultural heritage and its importance to humanity as a whole (UNESCO, 1972). In addition, the terms “cultural value” and “historical heritage” are used to emphasize the concept of “culture” in the context of its protection (Avreyski, 2021). The modern concept of “cultural -historical heritage” includes both cultural and historical heritage, emphasizing their interconnectedness and complexity. This concept enables us to understand culture not only as an accumulation of material and immaterial values over the centuries, but also as a process of continuous interaction between man and his history and identity. In this way, UNESCO also attaches great importance to the protection of natural heritage, expanding the scope of protection to include not only cultural but also natural values. Thus, the understanding of “natural heritage” as defined in the Convention covers natural monuments, geological and physiographic formations and natural landmarks, emphasizing the importance of nature as an integral part of our cultural and historical heritage.

Over the centuries, the history of mankind has often been marked by examples of neglect and destruction of cultural heritage, which today is considered unacceptable from the point of view of modern norms of preservation and respect for the past. These actions range from deliberate destruction during wars and conflicts to negligence and lack of means or will to maintain and preserve historical and cultural monuments. This pattern of behavior has been repeated throughout all historical periods, reaching its apogee in the 20th century, a time marked by two world wars and the Cold War, which left irreversible scars on the world's cultural heritage (Avreyski, 2021; Yordanova et al., 2021).

Thus, history provides us with countless lessons about the value of cultural heritage and the consequences of its loss. Cultural heritage conservation is not simply a matter of preserving physical objects or places - it is an essential part of maintaining the cultural identity, history and traditions of communities. However, throughout various historical periods, many civilizations have witnessed the destruction of their cultural symbols - acts that often aimed to erase the memory of a particular culture or subjugate its people.

The modern world recognizes the importance of cultural heritage not only as a bridge to the past, but also as a foundation for the future. International organizations such as

UNESCO and various national and regional institutions are working hard to build systems for the protection and preservation of cultural values. These efforts include not only the physical preservation of objects and places, but also the maintenance of living traditions, languages, and customs. Thus, while history provides examples of how we should not treat our cultural heritage, it also teaches us the value of preserving it. The opportunity to learn from the past and pass these lessons on to future generations is essential to creating a more conscious and sustainable attitude towards cultural heritage.

The deliberate damage and destruction of cultural monuments, their looting and resale for a pittance are a reflection of the harsh reality that cultural heritage has been forced to endure. These actions not only deprive current and future generations of the opportunity to connect with their past, but also tear apart the cultural memory that is vital to the maintenance of societal identity. Despite the bleak picture that history paints, these examples serve as an important lesson for modern society. They emphasize the urgent need for international cooperation and commitment to the protection of cultural heritage as an integral part of human civilization.

3 Results and Discussion

The consequences of the actions of the “Islamic State” on the world’s cultural heritage are particularly tragic and reveal a new aspect of war - the deliberate destruction of cultural monuments. The terrorist organization has carried out systematic destruction of sites of historical, cultural and religious significance in Iraq, Syria and Libya, and these actions range from the destruction of ancient cities and temples to the destruction of icons, statues and books, among others. The most significant losses are the ancient city of Nimrud, the city of Hatra, the sites of Palmyra and numerous other important cultural monuments. This large-scale desecration of cultural heritage has been condemned by the international community as “monstrous vandalism” and a “war crime”.

In addition to the immediate physical destruction, the “Islamic State” uses the illegal trade in antiquities as a means of financing its activities, which further aggravates the situation. This cultural terrorism not only deprives the world of irreplaceable historical and cultural treasures, but also destroys the cultural identity of the peoples in the affected regions. The international community, including organizations such as UNESCO and the Islamic Educational, Scientific and Cultural Organization, is calling for urgent measures to protect cultural heritage and develop strategies to restore damaged or destroyed sites. In this context, modern digitization and 3D reconstruction technologies play an important role in preserving cultural heritage for future generations, while at the same time creating conditions for training local specialists to carry out these tasks.

CyArk, Anqa and The Aleppo Project are leading examples of the successful digitization and protection of cultural heritage in crisis and conflict situations. They demonstrate how modern technology can be used to preserve cultural objects and ensure their transmission to future generations, despite threats of destruction or damage.

CyArk is a non-governmental organization dedicated to the digital preservation of cultural heritage around the world using 3D scanning, photogrammetry and other technologies. Founded in 2003 by Ben Kacyra and Barbara Kacyra, CyArk aims to create

a digital archive of cultural monuments and archaeological sites at risk of destruction, damage or alteration as a result of natural disasters, war, climate change, urbanization and other factors. Their mission is to provide access to this valuable data to scientists, researchers, educational institutions and the general public to support cultural heritage conservation and education (CyArk, n.d).

Project Anqa is a joint initiative launched in June 2015 by CyArk and ICOMOS (International Council on Monuments and Sites), with the aim of urgently documenting cultural heritage at high risk in the Middle East and North Africa. The name of the project, “Anqa” means phoenix in Arabic and symbolizes the idea of revival and preservation. The initiative aims to mobilize international specialists who, together with local experts, document cultural heritage in 3D objects before they are damaged or completely destroyed. The aim of the project is to use new technologies to create accurate 3D records of endangered cultural sites and to contribute to regional capacity building and knowledge transfer. The project also strives to develop a new sustainable activity by training local professionals and providing them with tools to continue the work of documenting cultural heritage after the end of the project. The Anqa project serves as an example of people-centered cultural heritage documentation in the digital age by offering an open web platform (ICOMOS et al., 2019; CyArk. et al., n.d.)). Project Anqa was started as a response to the catastrophic loss of cultural heritage in the Middle East and is funded by the Arcadia Fund, a fund in the UK with a mission to protect endangered cultures and nature. The project, launched in Syria in partnership with the General Directorate of Antiquities and Museums (DGAM), has documented seven sites in Damascus that illustrate the architectural diversity of the historic buildings in the ancient city (ICOMOS et al., 2019; Cyark, n.d.; Brzezicki et al., 2021; Akhtar et al., 2021).

The Aleppo Project is an initiative aimed at considering the future and the rebuilding of Aleppo, a city that has been severely damaged by the Syrian civil war. It is an open collaboration between Syrian refugees, students, academics, policy experts and others who contribute ideas for rebuilding post-conflict urban infrastructure, housing and cultural sites. Based in Budapest, in Shattuck Center on Conflict, Negotiation and Recovery at the Central European University’s School of Public Policy, this project brings together students from different schools and departments, as well as professors and other stakeholders (Aleppo Project). It seeks to engage the community and diaspora of Aleppo in the planning and decision-making process to ensure that the reconstruction reflects the needs and the wishes of local residents (The Aleppo Project, n.d).

4 Conclusions

Cultural and natural heritage are an integral part of our identity and history, providing not only a link to the past but also a foundation for the future of our society. Our research highlights the critical role of digitization in the preservation of these treasures, especially in the context of crisis situations and conflicts where the physical existence of the objects may be threatened. Key observations from our work show that despite the potential of digital technologies to transform the way we preserve and share cultural

heritage, the success of these efforts requires significant investment in technology, training of professionals, and the development of international standards and guidelines for digitization. Effective data storage and updating also play an important role in the long-term sustainability of digital archives. The provision of financial and technical resources for new technologies is essential to expand the opportunities for digitization of cultural heritage. The development of specialized training programs for digitization specialists will increase the quality and efficiency of digital archives. The creation and implementation of international standards for digitization and data storage is critical to ensuring the compatibility and accessibility of digital heritage. Strengthening the cooperation between countries, institutions and organizations is key to sharing knowledge, experience and resources on a global scale.

In conclusion, our research highlights not only the importance but also the complexity of the task of preserving cultural and natural heritage in the digital age. Commitment to these efforts by current generations is essential to ensure that future generations have full access to our shared cultural and natural resources. Realizing this strategic cause is crucial to the future of global civilization.

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