

Chapter 11

Digital technologies for the protection of cultural heritage in the 21st century

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We must respond, by showing that exchange and dialogue between cultures is the driving force for all. We must respond by showing that diversity has always been and remains today a strength for all societies. We must respond by standing up against forces of fragmentation, by refusing to be divided into ‘us’ and ‘them.’ We must respond by claiming our cultural heritage as the commonwealth of all humanity.

Irina Bokova, Director-General of UNESCO
(#Unite4Heritage, 2015)

Abstract

The following paper aims to present the scope of the threat that modern terrorism presents towards the historical heritage of humanity, as well as to recognize chosen technologies that may to some degree contribute to mitigating this threat. Introducing virtual modeling as well as online displaying of the historical objects that are either already destroyed or are threatened by conflicts around the world, it presents new ways to take the marks of the past into the future.

A variety of global conflicts have accompanied humankind for centuries, thus being an element of social life and international relations. The intensity of their occurrence in subsequent epochs varied and their character, methods, and

techniques of plating were continually evolving. Even in today's dynamically changing international environment, conflicts on the world arena are also subject to constant change. The nature and intensity of the conflict, and its methods are continually changing.

The leading cause of world conflicts are no longer the desire to gain new territories or having more slaves as cheap workers, but today's causes stem from religious, ethnic or ideological differences between nations. It is also crucial to note that the frequency of conflict has changed. The number of internal conflicts has increased many times during the last centuries. At the same time, the number of international conflicts has decreased. Modern wars, globalization and modern technologies, and constant access to information are far from the regular armed activities of the early 20th century.

Analyzing the current conflicts against the background of the early 20th century ones, we can point out a variety of common elements such as regular armed activities, guerrilla warfare or broader criminal activity (Kaldor, 2013). Among the differences, we can mention actors participating in conflicts (especially non-state actors), their goals, high level of acts of aggression against non-combatants, and lastly, methods of obtaining financial resources to conduct conflicts. The acts of pillaging, smuggling and trade carried out on the black market determine the prolongation of the conflict and the systematic destruction of the area affected by it. That is why historical objects become one of the main and the most desired spoils of conflict nowadays. Moreover, very often they are used as a means of payment for obtaining additional financial resources. And yet, on the other hand they are very often destroyed for ideological and religious reasons.

The destruction and pillaging of cultural heritage sites during global conflicts and crises is not a new concept. The authors who described the achievements of prominent historical leaders often greatly described the level of destruction caused by wars on cities such as Carthage, Jerusalem or Rome. These acts, carried out by the attacking armies, were the result of specific and clear rules of conducting warfare activities. The leader who won had the right to plunder, destroy or set fire to the defeated city. Along with the development of the law of war, the practice of greater protection for material objects has also increased. Initially, voices calling for the need to protect sacred places (as a temple and cemetery) resulted from fear of the wrath of the deity who inhabited these places. Then the first principles of the practice of protecting cultural goods and objects were created. People have started paying more attention to artistic objects (moveable and immovable) and their value. These rules based on the principles of reciprocity, proportionality, and humanity, have become the cornerstone of the Hague branch of International Humanitarian Law on Armed Conflicts, which is binding on the warring parties today.

An integral part of any global armed conflicts is death, pain, and ruthlessness in the actions of the warring sites. The warring sites are circumventing the regulations of the International Humanitarian Law of Armed Conflicts established by the international community, very often both sides of the conflict are not respecting the rules (Timeline, 2012–2018). Our cultural heritage in the face of the enormous tragedy should be ready to deal with many more challenges. However, this heritage, created and built up by previous generations, is a testimony to the achievements and culture of the nation. It is an element of world culture, with scientific, social, historical and aesthetic values. Future societies also must take care of them, protect them and respect them in such a way that future generations can learn about the world and their origins. To destroy our cultural heritage is like pulling the soul out of the nation, to deprive it of the identity and individuality, and to weaken it and in the end, annihilate it. Most of all, acts of destructions, which the international community has witnessed, show how significant this problem is. The best known should at least be mentioned:

- the destruction of Dubrovnik during the siege of Serbian troops in 1991 and 1992 (Dubrovnik was besieged by the Serbian army from July, 19, 1991 to January 1992, and 68% of the Old Town buildings out of 824 were destroyed. Former Yugoslav vice admiral Miodrag Jokić was sentenced to seven years' imprisonment in 2004 for his attack on Croatian Dubrovnik in 1991);
- the destruction of Buddha statues in Bamiyan (Afghanistan) by the Taliban in 2001 (in fundamental Islam it is forbidden to present images of Allah).

A few years later in 2007 in Pakistan, the Taliban tried to do this in the Swatu Valley near Djhanabad (Jagielski, 2007). In 1992, the National Museum in Kabul was plundered, where 35,000 coins were stolen together with a treasure from Kundzuk (Gańczak, 2018). In 2008, one of the Buddha statues in Bamiyan (Afghanistan) was damaged by NATO troops (Geller, 2008). In 1990, Museum in Kuwait was plundered by Iraqi troops (at that time, the Iraqi Government claimed that the action was necessary under the First Protocol to the Hague Convention, as a part of its duty to protect cultural heritage in the occupied territory; most of the objects were returned, but some were placed on the art market). They destroyed and plundered many works of art, books, manuscripts, and other cultural objects. Also, the National Museum in Cairo was looted almost at the same time (eight priceless objects were lost, including a wooden statuette of King Tutanchamon covered by gold from the 18th dynasty (Egipt: Bezcenne skarby, 2011).

The fighting of ISIS since 2010 in Iraq and Syria, where there are remains of Mesopotamia, and the Republic and the Roman Empire, and the Ottoman

Empire, showed people the danger of destruction on one of the most important of the world's cultural sites. The level and extent of destruction carried out by ISIS members are unprecedented in modern world history and even unimaginable in its consequences. It is impossible to indicate all the damage done at that time; however, it is worth to indicate a few of them. Many historical objects were destroyed as a result of street fights, bombardments, mechanical damages, pillaging, improper transport or storage and in acts of pure vandalism. UNESCO defines deliberate, conscious and premeditated destruction of cultural goods as a "violation of the laws and customs of war" as a war crime. Article VI of the Statute of the International Military Court defines the theft of public or private property as a war crime, the senseless destruction of settlements, towns or villages or a desolation not motivated by a need of war (Charter of the International Military Court, 1945). However, it does not help to prevent ISIS fighters from further destruction. ISIS is fully aware of acts committed and the threat that these acts of destruction pose all over the world. To draw media and people's attention, they documented and posted their acts online. They proclaim that art is idolatrous and offensive to God. As a result, paintings, sculptures, mosaics, monuments, and buildings were victims of fanatical and religious fighters. However, at the same time, ISIS recognizes the value of historical buildings and sells on the black market artifacts acquired as a result of pillaging or illegal excavations.

The policy of destroying culture pursued by ISIS members has led to irreparable damage to the heritage of Syria and Iraq. More than 2900-year-old ziggurat of the ancient city of Nimrud in northern Iraq was destroyed (Egipt: Bezcenne skarby, 2011). In addition to building damages caused by fighting, cities also become victims of illegal excavations and smuggling carried out by ISIS (revenues from the sales on the black market are among the three main sources of financing for Islamist militants, alongside oil and human trafficking). In Iraq, the fighters destroyed many monuments in the Nineveh Museum in Mosul (Ross, 2015), in Nimrud they have blown up the Nabu Temple (ISIS blows up Temple, 2016). Also, Damascus's Old Town was destroyed, as a Tetraylon and a Roman amphitheater in Palmiry (Dean, 2017) and the palace of Assyrian King Ashurnasirpal in Nimrud were blown up in 2015 (Danti et al., 2015, pp. 1–4) the same as the Umajad Mosque in Aleppo (the Mosque, together with the 45-meter high Minaret, collapsed as a result of the fighting of Syrian insurgents with forces loyal to President Bashar-l Assad). Also in Syria, many places were destroyed, for example Al-Madina suke (Karouny, 2012), Krak des Chevaliers (Darke, 2014) and Shiite's Jawad Husseiniyal Mosque (Hafiz, 2014). The Sunni Mausoleum of Ahmed al Rifai (2014) and the Mosque of Al Arbain in the center

of Tikrit were also destroyed. A variety of objects of the Christian religion were destroyed in this part of the world. As an example, one can focus on the oldest Christian Monastery of St. Elijah in Iraq, which was utterly ruined (Mendoza et al., 2016).

The principle of protection of and also respect for cultural goods during armed conflicts are regulated by the Convention for the Protection of Cultural Goods in the Event of Armed Conflicts (The Hague Convention of 1954). This document was prepared and signed after World War II in 1954. According to this document, countries accepted the responsibility to respect the goods located on their territories and those of the countries which are parties to this Convention. They shall, therefore, refrain from using the goods, and their immediate environment, as means of protection for purposes which could expose them to destruction or damage from any hostile activities. Countries and parties have also banned acts of theft, robbery, misappropriation, and vandalism. They ordered to prevent them and to cause them to stop, as well as not to use props on moving objects. In the Second Protocol of the Convention, the international community made it very clear that any person who deliberately uses a cultural asset to enhance the military action, causes widespread destruction of misappropriation, theft or destruction of historical sites, thus commits a crime and should be prosecuted under the law (article 25 of the Hague Convention of 1954). Given the constant devastation and destruction of the world heritage in ancient Mesopotamia, the Hague Convention is entirely inadequate, and its provisions no longer correspond to the revised form of military action. The UN Security Council, in the Resolution 2199 of 2015, unequivocally condemns the deliberate or accidental destruction of historic buildings for the reason that it is exceptionally powerless to destroy monuments. The Council is also aware that individuals and group associated with Al Qaeda generate revenue from the smuggling and pillaging of monuments form archeological sites, libraries, museums, and other places, thereby raising funds for recruitment activities and the organization of terrorist attacks. They also reaffirm and maintain their decision in Resolution 1843 to oblige all countries to take action to stop smuggling, illegal trade and export of historical items from Iraq. The Security Council also called on all organizations to support their activities and assist in the implementation of the resolution (UNSC Resolution 2199). By prohibiting trade in Syria's monuments, this resolution extends to 2003 with number 1483 on Iraq and condemns any deliberate or accidental destruction of cultural heritage. The resolution also confirms that the objects acquired as a result of trade and smuggling are a source of financing for the recruitment and organizational and operational processes of group and individuals associated with Al Qaida to carry out further terrorist attacks. The resolution also obliges

countries to cooperate and to take all necessary measures to stop the trade of Iraqi and Syrian artifacts, religious, historical or archeological and other objects of cultural and scientific importance to the cultural heritage of the area. Thus, UNESCO, INTERPOL and other organizations and citizens were obliged to be vigilant and to pay attention to the origin of historical buildings from the ancient Mesopotamia.

The conflict in Iraq and Syria continues, so the international community is watching social network and communication channels with concern, documenting the new and succeeding publications by ISIS fighters, as well as by those taking action to document the level of damage. In times of armed conflict in Syria and Iraq, where large areas of territory are cut off from the rest of the world and new technologies are lacking in permanent contact, internet communication, satellites and electronics are often the only tools to provide the opportunity to document and support measures to protect and respect cultural goods.

A key action for the damage inventory is the documentation of damage by satellite communication aerial photography and by drones. The photographs taken in this way allow us to track current activities in historical areas and archeological sites (UNESCO Director-General condemns, 2017). Comparisons made thanks to satellite or aerial photographs are often the only document that allows for documentation and chronology of events.

International cooperation between institutions, organizations, services, associations of researchers and collectors is a fundamental factor for any action. Publishing stolen objects on public lists or databases has in many cases saved those objects and allowed their return to the places from which they were robbed. Such databases are e.g. the Red List, created by ICOM (ICOM, 2018) and has been published since 2000. The Red List contains lists of stolen and cataloged objects of recognized institutions (e.g. museums). They do not provide a base for all objects that have been stolen from the area. These databases assist border authorities, police and auction houses in detecting illegally acquired objects. They have recovered thousands of artifacts from Syria, Iraq and Mali (Red Lists, 2018). Another important database is the INTERPOL Stolen Works of Art Database (Database, 2018), which is primarily dedicated to law enforcement agencies but also to other entities or individuals with appropriate powers and competencies.

The most crucial tool in this situation is the database of national legal acts maintained and made publicly available by UNESCO, which provides knowledge and other tools for the legal status of individual countries in the field of cultural heritage protection. The documentation of damaged and stolen historical buildings can also be found on Facebook profiles, like, for example, “Archeology in Syria”, which documented the destruction that took places in Syria. This page

is particularly valuable for photographs and documents of different objects in the „before and after” system. That helps and shows the highest scale of destruction.

The documentation of the losses is undoubtedly the first action that should be taken in order to protect and preserve the cultural heritage of all of the nations and countries. The reconstruction and renewal follow. Often, damage or destruction of historic buildings is irreversible and cannot be repaired. In this case, the digitalization of documents in cultural places is very helpful. After putting pictures into the system, people around the whole world can have free access to them via the Internet. This digital technology makes it possible, in the first place, to preserve them and make them available to the public. This form ages a fundamental task for museum institutions. The constant development of communication and digital technologies has opened a new chapter in communication between the museum and the visitors (the audience). Preserved digital presentation of objects, often in 3D technology, combined with scientific information describing the object, constitutes full information needed by the recipient. Thanks to the free access to the digitalized objects, the visitor, who is in a different country, can use the presented and preserved objects. The documentation of individual historic buildings has led to the creation of virtual museums. By scanning objects in 3D form and posting the whole collections on the website, it is possible to visit and get to know objects without leaving home (Louvre Online Tours, 2018). New virtual museums are often an addition to physical ones, and they are a newly developed form of promotion or encouragement for people to visit the museum headquarters. However, in a situation of armed conflict and irreversible damage, such a new form of digital museums are the only form of information and education for people nowadays and future generations (Chiodi, 2007).

The development of digital and information technologies allows not only for the preservation and dissemination of damaged, stolen cultural heritage. It also allows for a form of a replacement by three-dimensional objects printed in 3D on the basis of a digital model. This technique can be used to complement spatial objects such as Palmira, destroyed by ISIS fighters (Smith, 2018).

It may seem that the world of the new way of communication, technology development, digitalization and globalization allows for a quick flow of information, materials and tools to protect and prevent the destruction of historic buildings. Members of international organizations, the staff of institutions, services, researchers and specialists shall endeavor to preserve all that is left of previous generations in order to pass it on to future generations. Creation of international legal framework, people's will, and the technological developments that support it cannot save the world's heritage from human fanaticism, hatred and the desire for profit as long as they are under threat and at risk of destruction.

Undoubtedly, the available technology and computerization of many human undertakings allow for much quicker and effective cooperation of services, help in recovering and saving historic places. Cooperation of law enforcement authorities through the publication of lists of treated monuments, joint exercises, and exchange of their own experiences are the key for this process. If it is done successfully, future generations will be able to say that we have protected their heritage for them and have saved their cultural legacy.