

THE ITALIAN LAW ENFORCEMENT SYSTEM USED TO PROTECT CULTURAL PROPERTIES, WITH PARTICULAR REFERENCE TO DATABASES AND MASS MEDIA

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Abstract

The basic pillar of the protection of cultural goods is the database which I present in this paper. Leonardo and iTPC can be considered as the next-generation database of stolen cultural properties, what the international law enforcement agencies do not have. During the the research, I have used the methods of interviews and the experiences gained during my study trip in Italy. Modern technology, and through this, mass media is essential to enhance the protection of cultural properties.

Key words

digitalization, database, Italy, Carabinieri TPC, illicit trade of cultural property, cultural heritage, iTPC

1. Introduction

The modern era has many advantages in the fight against the illegal trade in cultural goods. One of the most important and essential milestones for the police is the database. There are exists many databases which can be nationally and internationally as well. The best known is the Interpol Works of Art (WOA)¹, which is used in most countries, although the Italian 'LEONARDO',² developed by the Italian Comando Carabinieri per la Tutela del Patrimonio Culturale (Carabinieri TPC) which has the most data of stolen works of art. The advantage of this database is that civilians can use it, of course, only a particular segment. Based on the databases, we can extract different data, such as statistics (but we have to count on latency), which type can be the following segments:

- What are "most favorite" works of art?
- What are the most vulnerable countries?
- Where can the destination market be located?

¹ Interpol WOA's database: <https://www.interpol.int/notice/search/woa> (29.12.2017)

² Carabinieri TPC's database: <http://tpcweb.carabinieri.it/SitoPubblico/search> (29.12.2017)

From the source and the destination country, the routes could be established, but the latency (already mentioned) must be counted here as well.

2. WHY IS THE DATABASE IMPORTANT?

The effectiveness of investigations of stolen objects can be enhanced if police identification of stolen and circulated objects. Thus, in order to facilitate this, the database should include images, as well. Police in many countries strongly recommend to private collectors, museums, and ecclesiastes to make an inventory in case someone steals their cultural properties. It should be noted, in any case, that the police officer is not an expert on cultural goods and therefore cannot be expected to determine the age and origin of the objects during the investigation. If the owner has at least a picture of the stolen object, the investigator will be able to identify the item and forward it to other law enforcement agencies, such as Interpol. Thus, the database must have both pictures and the text data of the objects during the investigation, which facilitates the search of the subject as well as international investigation and cooperation with other agencies, and plays an important role in communication. Some databases have a cross-border function, so many law enforcement professionals can manage the same database (record, share, delete) from another country. These include the Works of Art database. International co-operation is also crucial in the fight against the illicit trade of cultural properties, because we can talk about a cross-border organized criminal sector and need to be stopped by an alliance of countries, good communication and cooperation on a common platform that can be the database.

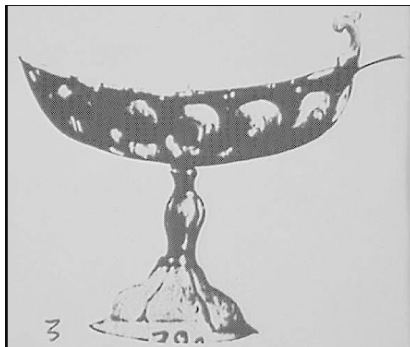
3. WHAT IS THE DATABASE CONSIST OF?

One of the most important thing is that, what type of data we enter into the database. These data can be image and text attributes. The most important criteria for entering text data are:

- type
- size
- artist / creator
- period
- techniques
- materials made of
- previous holders
- Have any injuries
- its weight, etc.

Of course, not all of these points will be answered, but these are the most important and available in most law enforcement databases. These points should also be taken into account when creating a home catalog. One of the biggest drawbacks to databases is that if the owner has a picture of the subject, it can be seen in the background of old, black and white or just a family

photo.³ Because of such opportunities, it is not surprising that we can also find in the largest databases of art objects where couples, tourists, or families are included in cultural assets.⁴



1. picture: nave

Source: Carabinieri TPC database, code: 08259{3}



2. picture : jug

Source: Carabinieri TPC database, code: 23626{9}

The first has a poor image quality, while Figure 2 shows a jug decorated with colorful scenes. While the ornamental motifs can be seen in the jug, observing the form of the ship in the shape of a statue - personally - I think I can discover a flower like a statue. Colors are also very important in the description, but these boat-shaped statues are not visible. Even if it is decorated with colorful precious stones, or if it is chiseled, we can't see it because of the poor quality. This example also demonstrates the importance of higher quality images in the database in the progress of the investigation.

³ In addition, it is important to keep the documentation in a proper place. In one case, the painting was stolen with the documentation, which was attached to the back of the picture.

⁴ Objects stolen from the museum, as well as artifacts destroyed or damaged in armed conflict, are transferred to databases through a photograph made by tourists and then used during the investigation and during the restoration process. (Wilson, 2016)

4. THE NATURE OF THE DATABASE

The database of stolen objects is a relevant database for the police, as in most cases museums or private collectors indicate their economic loss to the authority. It would be more complicated to run a database of counterfeits because many similar data (such as the same-looking painting) would come back with huge amounts of data. Another useful database (as I mentioned) would contain private collections. However, this latter set of data would be at private collectors, museums, and ecclesiastes who own these objects.⁵

In addition to statistics, there are many other options available to the police to use the data on stolen items in the database. Most of the archaeological findings found on the black market come from museums, private collections, churches, or illegal excavations. If the policeman finds an object (without any kind of paper) at the border in a vehicle and during the subsequent investigation neither the object is found in the Interpol database, nor on the basis of any other announcement, it is very likely that it is possible to find that the object is illegal. This is also associated with the fact that there is no inventory number on the subject. In addition, online interfaces are just as much an opportunity as a threat. Tracking sales and purchases on the Internet helps you draw different relationships and networks. However, law enforcement agencies can interact with a number of major web sites by requesting data from sellers and buyers through Interpol. Of course, you can only ask for this if you have a suspected suspicion of a crime.

5. LEONARDO

The Leonardo database was created by the Carabinieri TPC department, which has unique technological developments around the world. The Carabinieri Unit for Defense of Art was established on May 3, 1969 (Rush-Millington, 2015, p.15), nearly fifty years ago. In Italy, the Guardia di Finanza and the aforementioned body are relevant to the fight against illicit trafficking in works of art. After the Second World War, a separate unit took part in the negotiations on the return of cultural goods brought from Italy to Italy, including the Guardia di Finanza (Lukács, 2018, p. 300). However, over the years, their activities in the field of cultural goods have been limited to the economic aspect. Carabinieri's special department took over most of the tasks and developed its complex system, which, in addition to the operational units, also carries out educational, mass media, and manages the database of stolen objects, named Leonardo.

2004/42. Article 85 of the Italian Government Decree states that the Ministry has established a database of data on stolen cultural goods. The "cardboard archive" was created in 1969, where each object had a cardboard with known data and, at best, a black and white image. However, this old method, known in Hungary, was followed in 1980 by the first telematics implementation. This meant that only text data contained data on local PCs. In 1990, the second telematics implementation was carried out at the Headquarters; servers have been created to store the image. In 2000, they developed a thoughtful version of a computer server that was able

⁵ In many cases, they do not dare to make a home catalog because they are afraid to get out to others about what they have. However, it also happens that they do not understand why the police want them to be recorded. However, this should not be accounted for by the police, but merely to keep a home catalog at home, in order to facilitate the investigation during possible theft. Thank you Béla Vukán for your information.

to store text data in addition to images. In 2006, the last and current changes were made. A separate server for entering images and text data was created for the Carabinieri TPC. In 2011, within the framework of the PON project,⁶ a module was developed to support the security of Italian archaeological sites. In 2015, a new, improved version of the database, LEONARDO, was launched.

The database contains Italian and foreign descriptions and photographs. There is no limitation period in LEONARDO, so from the outset every item is included. There are 1,226,674 pieces in the database, of which 627,693 images, 64,111 registered home burglaries (5311 foreigners) and 6.246,604 devices. It should be mentioned that foreign cases are only included in the database if they concern Italy or Carabinieri TPC. Thus, in the Hungarian context, until 04/04/2017, 403 items in the LEONARDO database do not give a complete picture of the figures, as I have already mentioned only those data that are relevant to Italy or the Carabinieri TPC are included in the database. . The Italians are very proud of their database as they are the first in the world to have the largest data collection, for example, there are only 94,000 images in the second-rank Interpol database.⁷ On the Carabinieri TPC website, you can access the database, search and analyze statistics.⁸

What elements does this database contain, what else does it contain? The Leonardo database is able to compare text to image with text search. This means that if a photograph is uploaded to the database, the system determines whether the object is in the database, ie stolen, compared to the images it knows. This was done to eliminate the time-consuming and inaccurate search for text search. However, we cannot go without this negative side. Not all cases can be eliminated by the program because in many cases the missing objects are of poor quality black-and-white images, and in case of vases and other spatial objects it is necessary to take pictures from all sides in order to find the results in the database.

Az Interpol például még nem rendelkezik a Carabinieri által kidolgozott újítással. Ahogy a legtöbb adatbázisnál, úgy náluk is a szöveges bevétel a jellemző. Ám tételezzük fel, hogy nem művészettörténész, képzőművész vagy régész végzi az adatbázisok kezelését. Egy laikus számára nem egyértelműek az adatok, így más attribútumokat vihet fel a rendszerbe, mint amelyekre valaki más a későbbiekben rákeres. A következő példa egy rendészeti szervnél fordult elő, miközben az adatbázisuk működését mutatták be nekem. Tudtuk, hogy a két lopott Van Gogh festményt felderítették Olaszországban, azonban ebből az adatbázisból még nem távolították el a két képre vonatkozó adatokat. A rendészeti szakember úgy keresett rá az egyik festményre, mintha nem tudná a festő nevét és címét. Azért is fontos ez, mert ahogy már szó esett róla, a rendőrök nem művészeti szakemberek. A keresőbe jelen esetben a tájkép, tíz ember és tíz hajó szerepelt. Eredményként azonban számos megfelelést adott ki a rendszer, kivéve azt, amit kerestünk. A későbbiekben kiderült, hogy azért, mert aki rögzítette az adatokat a rendszerbe, teljesen más attribútumokat tartott fontosnak, így például a tenger szó szerepelt és a csendélet a jelzők között. Ezen nehézségek kiszűrésére lenne alkalmas a Carabinieri TPC-nél alkalmazott Leonardo vagy a civil lakosságra szabott, továbbgondolt változata, az iTPC.

⁶ Il Programma Operativo Nazionale.

⁷ Datas were valid until 04 June 2017.

⁸ Thankto the Carabinieri TPC for the help and informations.

6. ITPC

The civil version of the Leonardo database described above has been created as an application. You can download the application to your smartphone, laptop, or tablet. Its main function is that if you want to buy an art object, you can check in the database whether it is stolen. To do this, you need to create a picture of the object you want to buy and upload it to the database through the application. Here it looks for the same shapes and points as the picture and then publishes the result. In addition to this feature, many interesting features can be read on the app, including Carabinieri's publications, from which you can read about discovered artifacts. In practice, however, the site often freezes and does not allow objects to be loaded. However, the principle and the idea are a unique and very good initiative, but they still need IT developments.

7. THE IMPORTANCE OF MASS COMMUNICATION BY LAW ENFORCEMENT AGENCIES

Why is it important to inform the crowd? The help of the civilian population can be decisive, for example, in the expansion of the database or in the detection of stolen objects. This function is also intended to be loaded by iTPC to filter out stolen objects through the application at the auctions and other fairs, as police expertise is finite.

share work and place great emphasis on mass media and education. The division of labor is the harmony between the various bodies: polizia, Carabinieri and Guardia di Finanza, as well as between the departments established within them.

Although Guardia di Finanza also publishes books on discovered cultural goods (La Guardia di Finanza, 2003; La Guardia di Finanza, 2016), they are not so significant. In this area, the Carabinieri TPC celebrates a new edition of the discovered items each year. The Italian mass media, as well as scientific publications, also include thematic educational books, such as the book on ancient eating habits, which present the habits of that time through discovered objects (La Guardia di Finanza, 2016). In addition, historical articles (Lukács, 2018) about the formation of the organization and their operation (Rush-Millington, 2015) and their most important tasks (Carabinieri TPC 2016) were published, including their foreign missions (Pasqualini, 2001; Pasqualini 2002). publications were published. Some of the studies and articles are also uploaded to the iTPC application mentioned above. In addition to publications, a press conference and exhibitions are organized for the public. In primary and secondary schools, students are taught how to learn about cultural heritage protection at an early age and what to do if they find a work of art.

In addition to education, the police should use the online interface to be the most important way to communicate. The Z generation requires interactive information and the ability to use online. Although the Carabinieri TPC has no Facebook and Instagram pages, however, the Carabinieri itself has a single, general operation that shows every segment of the organization's operation. Thus, exhibitions related to artistic protection,⁹ as well as entries promoting their activities, help them to get to know them all over the world, to track their work and to get to

⁹ The pictures include the restoration of damaged monuments in earthquake-stricken areas by the Carabinieri TPC staff, as well as helicopter aerial surveillance at archaeological sites, and a 1918 and 2018 image of the Carabinieri TPC staff in Jerusalem.

know them a little. This has many advantages, as people turn to them with confidence both in their home country and abroad.

In my opinion, the initiative is already on track with the Carabinieri TPC, but it is still lagging behind at international level. Going further in technology, the Google Arts & Culture app has many advantages. Although not a law enforcement software, it is important to know it, as some of its points could be adapted to the law enforcement sphere. Through this application, we can view the paintings of over a thousand museums in the world in high resolution (Kennicott, 2011). Nowadays, there is a popular option for application downloaders: museums can be “roamed” in an online 3D version. In addition, the user, if requested, will search for the figure in the painting that best resembles the figure and give it in percent gold. This principle is also important because iTPC does not give the option in percent, just whether there is a hit in the database or not. Why would a percentage definition be important in the light of cultural goods?

8. DETERMING (%) OF DATABASE IN ART OBJECTS

In the past, I have outlined how to build a database of stolen cultural goods, what types they have, and how the Italian Leonardo database is built, structured, and communicated. However, it has not been a case of an offense. About the transformations. Typically, the perpetrators attribute large paintings, then divide them and sell them in several smaller pieces on the market, or paint a part of the picture. The Carabinieri TPC staff also said during the interviews that these paintings are easy to spot. In many cases, each figure looks toward a particular point on the painting, which is hidden from us because there is no shape at that point on the image. But there was a case where the limbs of the figures were missing from the painting. In this case, the more sophisticated offender can cover the unwanted parts of the canvas. In this case, the above-mentioned percentage determination would be useful, which would filter out the paintings that were subsequently repaired and repainted. Without this, however, you might not find the current database match because it is not 100% identity. In addition, the already mentioned: the existence of high quality photos would also contribute to the success of investigation and database management.

9. CONCLUSION

In order to curb the illegal trade in cultural goods, a well-structured database of images of appropriate quality is essential. In addition, the database manager must have the appropriate competencies. The Italian LEONARDO database, which is the only one in the world today, is available in the civil sphere through its iTPC application. With the help of technological developments, a new form of mass media appeared alongside the old type: education and publication. The next phase of the database development could be a database of three-dimensional objects, where there would be no problem with the image at which the subject was photographed. To do this, the three-dimensional scanning method would be essential. An important criterion is that the objects should not be damaged, so chip and other marking techniques, such as micro-precision and nanotechnology-based methods (Kármán- Kiss, 2011, p.209) raise ethical problems. For this reason, three-dimensional scanning and the associated database would be an innovation that would facilitate the work of the police.

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