THE IMPLEMENTATION OF AN INTERNATIONAL CHARTER IN THE FIELD OF VIRTUAL ARCHAEOLOGY

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Abstract:

Computer-based visualisation of cultural heritage, like the concept *Virtual Archaeology*, is something very new. Nevertheless in the last ten years different groups of experts have worked in the creation of standars and recommendations devoted specifically to the field of ICT and cultural heritage. Lund recommendations and London Charter are two good examples of it. However the application of ICT in the field of archaeological heritage haven´t, by the moment, specific recommedations or standars.

Since its creation in 2008 the *Spanish Society of Virtual Archaeology* (SEAV) groups more than 23 research groups and 21 private companies concerned about the future of virtual archeology in the world. For this reason SEAV has set up the *International Forum of Virtual Archaeology*, an international forum of experts intended to establish the theoretical foundation of the international future of Virtual Archaeology. The first purpose of the International Forum of Virtual Archaeology is lead the transnational creation of the *International Charter of Virtual Archaeology*, called *Carta de Sevilla* (Seville Charter). To manage this process SEAV has created the *International meeting of archaeology and graphic informatics, heritage and innovation* (ARQUEOLOGICA 2.0), the online scientific journal *Virtual Archaeology Review* (VAR), and the website www.arqueologiavirtual.com.

1. INTRODUCTION

If we refer to the development of art history, the representation of reality has undergone a major evolution. The lucky invention of perspective is an important step in the visualization of space, but, however, is a limited resource, because there is more than a flat representation of three-dimensional space. Had to spend much time to reach the 3D representation of space in a generic environment that allows the user to feel, to some extent, which is in the place represented, more unique experience if done in an area of interest.

Introduced as a new millennium, it is necessary to rethink our thinking and adapt to technological advances around us. The possibilities offered by current computer should be seriously considered, to take advantage of that horizon opened by digital technology, especially computer graphics technologies, with its possibilities and benefits are revolutionizing the fields of audiovisual production. It is, therefore, that technology can help in the representation of reality and can become a powerful ally of History.

Of all the applications of new technologies in the field of Humanities and Culture in general, archeology where they are getting excellent examples of virtual historical reconstruction and of preservation and dissemination of archaeological heritage.

The concept "Virtual Archeology" was first proposed by Paul Reilly in 1990, describing it as "a set of computer techniques that allow 3D visualization and realistic virtual representation of objects and buildings whose remains are gone or are in a poor state of preservation as to make it impossible or very difficult its interpretation" [4]. Virtual Archaeology, in fact, can depict immediately complex contexts relating to the past or forward readings of historical, architectural, territorial or social situations, proving to be a valid contribution to the transposition of information, thus proposing a potent instrument for the cultural transmission.

In recent years the impact of new technologies has been very strong in the way of representing the archaeological heritage. Knowledge has been change from exclusive, erudite and almost inbred in the way of representing and managing the archaeological heritage, to a completely different way. Despite what one might think, the discipline of Virtual Archaeology born with certain conceptual maturity. In its few years of life and based on some experiences of failure, has managed to hold and try to design, as a scientific discipline, far removed from the external printing as fun toy, that has been seen by some.

Why should this certain conceptual maturity? Virtual Archaeology germinate in a field where long and far-reaching international charters and recommendations have created specific rules in the field of research, conservation, restoration and dissemination of conventional archaeological heritage. Many professionals have been able to extrapolate the guiding principles of these charters and recommendations to the new virtual archaeological projects. However, many professionals have forgotten this obvious relationship between the conventional archaeological heritage and virtual archeology, justifying this attitude by the seemingly neutral character of virtual archeology.

However, despite the innocuous nature of virtual archeology for the physical dimension of heritage, play a very active role in the dissemination of it. In a society where we live under the tyranny of the image, a simple failed recreation can override the more complete and thorough archaeological scientific research. A superficial walk by the world wide web can offer many examples of unfortunate digital interventions that can, with its iconological value, contaminated us with a false history difficult to eradicate later.

Nevertheless, when the 3D tools are applied in optimum conditions, the resulting product passes far beyond the primary objective of seeing what no longer exists. Opens a new avenue for research, recording, preservation and dissemination, where the universal language of the image becomes the key to ensuring effective integrated management of archaeological heritage.

However, at this point the question arises: What are these optimum conditions to ensure the quality of the resulting product? Or better yet, under what criteria are set the quality of virtual archaeological project?

2. THE HISTORICAL BACKGROUND IN THE CREATION OF STANDARS FOR THE COMPUTER-BASED VISUALISATION OF CULTURAL HERITAGE

In June 2000 the *eEurope 2002 Action Plan* endorsed by the EU Member States in the European Council in Feira (Portugal). The objective of this Plan was to stimulate European contents in global networks, thus take full advantage of opportunities created by the advent of digital technologies.

Within this overall objective there was a specific joint action of States and the Commission aimed at creating a coordination mechanism for digitization programs in the Member States.

Almost a year later, on April 4, 2001, met in Lund (Sweden) representatives and experts from Member States to discuss this issue and recommend measures to promote better coordination and add value to digitization activities in a sustainable manner in time. The meeting agreed that European resources in the field of culture and scientific knowledge provide a unique public asset that represents the collective memory and experience of our different societies and provide a solid foundation for the development of our digital content industries in a sustainable knowledge society.

Likewise representatives and experts at Lund stressed the value and importance of cultural and scientific digital content in Europe, so long as these contents represent:

An accessible and sustainable heritage. The cultural and scientific heritage of Europe is a unique and valuable asset. The digitization of their resources is an essential activity to make them more accessible to citizens and preserve the collective cultural heritage (both past and future) in Europe.

A support for cultural diversity, education and content industries. Digital cultural goods are essential to maintain and promote cultural diversity in the current worldwide and are a key resource for education and tourism industries and the media.

A resource of great variety and richness. Member States have invested large sums of money on programs and projects of digitalization of cultural and scientific content. These activities cover various fields and content types, such as museum artefacts, public records, archaeological sites, audiovisual archives, maps, historical documents and manuscripts.

Parallel to the declaration of Lund in recent years of the twentieth century and early twenty-first many researchers began to stress the importance of open international debates on epistemological, ontological and theoretical questions on the use of virtual reality in the field of cultural heritage . Authors such as Maria Roussou (Foundation of the Hellenic World), Juan Antonio Barcelo (Universidad Autonoma de Barcelona), Nick Ryan (University of Kent), Bernie Frisher (University of Virginia) or Franco Niccolucci (The Cyprus Institute) posed openly interpretive problems that are associated with any attempt to reconstruct virtually a thing of the past. The debate originally centered on the credibility and transparency of the virtual reconstructions gradually drifted into a wider debate based on acceptance by researchers from the premise that "not anything goes" when it comes to reconstructing the past or use the new technologies applied to cultural heritage.

The growing concern over these issues led to the creation in 2000 the organization's Virtual Reality Cultural Organisation (CVRO) and one year after the group Virtual Archaeology Special Interest Group (VASIG), whose work was crucial to keep alive and enhance the debate within the most important international academic forums as CAA (Computer Applications and Quantitative Methods in Archaeology) or VAST (International Symposium on Virtual Reality, Archaeology and Cultural Heritage).

In 2005 the King's Visualisation Lab (KVL) belonging to King's College London was launching a project called Making Space whose purpose was "to investigate a methodology for documenting the cognitive process of research based on three-dimensional visualization". Between 23 and 24 February, 2006, 50 researchers debated the issue of scientific transparency in the British Academy. As a result of that meeting on 25 February, a smaller group of researchers led by Franco Niccoluccio prepared a document to serve as a preliminary draft of the Charter of London, but above all, laid the foundation for what would be the Advisory Board Charter responsible to continue to improve the document for months and even years later. The Advisory Board was jointly chaired by Richard Beacham (King's College London) and Franco Niccolucci (The Cyprus Institute), under the overall coordination of Hugh Denard (King's College London) and Sorin Hermon (The Cyprus Institute).

In March 2006 Hugh Denard, circulated the first draft of The London Charter, structured mode Ename Charter for discussion, improvement and adoption. In June of that year decided to publish the first version of the Charter that was housed and displayed to the public in August 2006 in www.londoncharter.org under the title "*The London Charter for the Use of 3D Visualisation in the Research and Communication of Cultural Heritage*" [1].
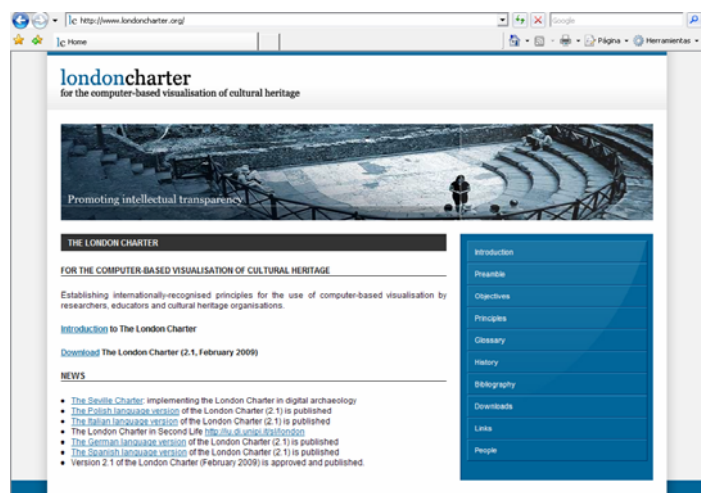

Figure 1: www.londoncharter.org

In November 2007, published the translation of the Charter for the Italian and Japanese, and a year later saw the light the first version in spanish through collaboration between Alfredo Grande (President of Spanish Society of Virtual Archaeology SEAV) and Victor M. López-Menchero (University of Castilla-La Mancha).

After strenuous debates about the principles emanating from the first draft of the London Charter in February 2009 appeared a new and improved version of the document known as Draft 2.1, whose title also suffered some changes compared with version 1.1, running under the title "*The London Charter for the Computer-based Visualisation of Cultural Heritage*". The first authorized translation of the new draft was on this occasion the spanish version that would run again by Alfredo Grande and Victor M. López-Menchero, Spanish representatives approved for that purpose by the Advisory Board of the Charter.

The London Charter for the Computer-based Visualisation of Cultural Heritage has served to establish a set of general principles and recommendations that serve to increase the scientific rigor with which new technologies are being applied worldwide in the field of cultural heritage. This aspiration is supported by a strong belief that computer visualization applied to the field of cultural heritage is not simply a tool or an auxiliary technique, but that really is, or may constitute, a discipline itself able to develop a method and specific techniques designed to meet an object of particular study. However, as the London Charter recognized the application of computer visualization applied to the field of cultural heritage is a theme too broad that it requires much more precise specification. It is at this point the idea to create an international charter of virtual archeology. The Spanish Society of Virtual Archaeology (SEAV) will be responsible for coordinating the entire process.

3. THE HISTORICAL BACKGROUND OF THE INTERNATIONAL CHARTER OF VIRTUAL ARCHAEOLOGY

Since its creation in 2008 the *Spanish Society of Virtual Archaeology* (SEAV) groups more than 23 research groups and 21 private companies concerned about the future of virtual archeology in the world. For this reason SEAV has set up the *International Forum of Virtual Archaeology*, an international forum of experts intended to establish the theoretical foundation of the international future of Virtual Archaeology. The first purpose of the International Forum of Virtual Archaeology is lead the transnational creation of the International Charter of Virtual Archaeology, called *Carta de Sevilla* (Seville Charter). To manage this process SEAV has created in 2009 the *International meeting of archaeology and graphic informatics, heritage and innovation* (ARQUEOLOGICA 2.0). In Sevilla, June 2009, at the I International Meeting on Archaeology and Graphic Informatics, Heritage and Innovation ARQUEOLÓGICA 2.0, several major purposes were pointed out. Among the most significant aims was to have feedback from the experts of this discipline in order to seek for an opportunity to create an international charter which should apply the London Charter especifically to Virtual Archaeology.

This was the purpose of the lecture session called "Reflections about the London Charter", where three of its signers, Richard Beacham from King's Visualisation Lab. King's College, Sorin Hermon from Digital Cultural Heritage and Archaeological Sciences of Cyprus and Juan A. Barcelo from the Universidad Autónoma de Barcelona, joined SEAV's initiative in order to create a new document, counting on wide international agreement, and linked to ARQUEOLÓGICA 2.0 [2].

After such session, the Plenary Assembly called "Foundations of Virtual Archaeology" took place. Thirty well-known experts and researchers of this field of knowledge took part at it, and they claimed it was highly necessary to define, shape and properly ground Virtual Archaeology, which has not been yet set up in spite of its success and use worldwide.

Figure 2: Session called "Reflections about the London Charter". I International Meeting on Archaeology and Graphic Informatics, Heritage and Innovation ARQUEOLÓGICA 2.0

The conclusions of the first meeting of the International Forum left no room for doubt: it was an urgent need to start working to create an international charter of virtual archeology. The SEAV then began intensive work to produce a first draft of the international charter of virtual archaeology. This draft was presented in Sevilla, June 2010, during the second meeting of the international forum within the II International Meeting on Archaeology and Graphic Informatics, Heritage and Innovation, ARQUEOLÓGICA 2.0. receiving a great welcome by those attending the forum [3].

Parallel to the celebration of ARQUEOLOGICA 2010 and since one of the central objectives of International Forum was confirm Virtual Archaeology as an independent and recognized field of research, in 2010 born the online scientific journal Virtual Archaeology Review (VAR) with the objective of consolidating itself as an prestigious international publication. The creation of VAR is playing a major role in the drafting of the Seville Charter. So, for example, the number four of the journal is dedicated exclusively to treat theoretical aspects of the discipline, which is essential to establish real scientific standars.

Figure 3: *Virtual Archaeology Review* (VAR) and web portal *www.arqueologiavirtual.com*

Furthermore, and to improve the dissemination and knowledge that the international community have about the process of drafting the Seville Charter, has created web portal www.arqueologiavirtual.com. This site provides not only the disclosure of the International Charter of Virtual Archaeology but also of accompanying activities, such as the International Forum, ARQUEOLOGICA 2.0 or Virtual Archaeology Review.

4. CONCLUSIONS

Despite the work done by the working team of the International Forum of Virtual Archaeology is still necessary to continue leading the transnational creation of the International Charter of Virtual Archaeology. To achieve this purpose The International Forum of Virtual Archaeology conceive the following activities:

ENCOURAGE open and permanent cooperation between the Seville and London Charters.

COORDINATE supporting actions and the spread of Virtual Archaeology together with major international entities.

PROMOTE transnational discussion about the theoretical foundation of Virtual Archaeology.

OFFER researchers from the field of virtual archaeology an adequate edition to have their research results, theoretical contributions and procedures properly publicated.

RATIFY the international draft of Seville Charter at the Plenary Assembly of the IV International Meeting on Archaeology and Graphic Informatics, Heritage and Innovation ARQUEOLÓGICA 2.0 which will take place in Sevilla, June 2012.

ENSURE the spread and proper performance of the Seville Charter principles.

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