

Chapter 1

Cartographic Information Off-Line and First Nations: A Significant Contribution to the Enhancement of the Architectural Heritage

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ABSTRACT

We present the importance of analogical and digital cartography in the reconstruction of the cultural heritage of the first nations. Besides, through the cartographic information and the interactive multimedia systems, we examine the metamorphose of ancient pre-Columbus constructions, whose physical sites were based in the advanced knowledge of those civilizations in astronomy issues. We also present the main stages in the digital cartographic generation for their later use in the multimedia systems. Finally, we sum up the difficulties in the diffusion of certain historic contents compiled in the off-line multimedia supports, in the Internet and in the current social networks.

INTRODUCTION

As a rule, in daily life human beings have some points of reference of the architectonical surroundings, such as a mountain, a river, a tower, a fountain, a monument, a square, a market, etc. They are natural and/or artificial spaces which serve to orient people in their constant daily activities. The importance of those points of reference is easily detected at the moment they undergo an unexpected modification, thus generating a disorientation in the perambulating of people. For instance, after a strong quake, in which those points of reference are totally destroyed, many people surviving to the catastrophe do not know where to go. In those situations, neither signage nor cartography, for instance can help 100% those people, since the human and social factors overcome for a lapse of time the help coming from the convergence of the last generation software and hardware. The current research work is structured in the following way: a brief state-of-the-art, the phases in the generation of the traditional and digital

DOI: 10.4018/978-1-5225-2616-2.ch001

cartography, examples of historical and analogical cartography, the analysis of a multimedia system where there is a theoretical-practical intersection of the main issues of the current work, the learned lessons and the conclusions.

It is in the creation of maps where there is an intersection of computer graphics, digital photography, digital impression, satellites, cultural algorithms, etc. (Cipolla-Ficarra, 1993; Dent, Torguson, & Hodler, 2008; Reynolds, Ali & Jayyousi, 2008) As a rule, in the institutions charged with the cartography of a territory such as can be for geopolitical reasons, it is easy to come across with a classical structure, divided into three main areas, such as photogrammetric, satellite image and thematic (Cipolla-Ficarra, 1993; Robinson, et al., 1995). The greater the quality is in the grasping of the first images and the data in general, the fewer are the mistakes to be corrected, and consequently the sooner optimal results will be obtained from the qualitative point of view. In photogrammetry, the data are obtained in a vertical way, through a photo camera (Wild RC 30) implemented in a plane, for instance. Later on, the pictures are developed (Cipolla-Ficarra, 1993).

In the 90s and in the institutions devoted to these tasks such as ICC (Catalan Institute of Cartography –Barcelona, Spain) each photogram was of about 23x23 cm (Cipolla-Ficarra, 1993). The union of the pictures of a first stereoscopic vision of the surface, that is, is seen in relief. The digitalization of the pictures is made with a scanner. The images stemming from the satellite contain information compiled by sensors capable of “reading” the electromagnetic radiation emitted by the earth surface. Such radiation is

Figure 1. A classical group of figures of the 90s for the obtainment of analogical and digital images for digital cartography: plane with Wild RC-10 photogrammetric cameras, cameras for oblique photography Rollei 6008, etc.), scanner to digitalize analogical images, manual edition, plotter printer, etc., to get a high-resolution map, field work (geodesy)



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