Chapter 8

Computer Animation for Ingenious Revival

Francisco V. Cipolla-Ficarra
Latin Association of Human-Computer Interaction, Spain & International Association of Interactive Communication, Italy

Miguel Cipolla-Ficarra
International Association of Interactive Communication, Italy

ABSTRACT

In this research work, we make known the excellent advantages of the use of computer animations in 3D with the purpose of transferring scientific heritage into paper support to the current generations of users of interactive systems. In it the archetypes factor is analyzed (semiotics perspective) and communicative inference of the analyzed examples. Besides, the main components of the layout category are analyzed, which are related to graphic computing and communicability inside the interface of the interactive system.

INTRODUCTION

Bi-dimensional (2D) and three-dimensional (3D) computer reconstructions may be an excellent solution in the context of the cultural heritage to solve the reproduction limitations of artistic works in copyright issues, for instance (Hughes, et al. 2014; Cipolla-Ficarra, 2014; Potter, 1995). In other cases, they can represent the scientific advances of civilizations through the images of objects, tools, mechanisms, etc., which have lasted across the centuries.

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in analogical support, as in the case of the “Book of the Secrets”, published in the year 1,000 (Al-Muradi, 2008). In those illustrations are concentrated not only the mathematics, geometry, physics, chemistry, etc., but also an anonymous historical legacy, in many cases, but which has allowed inventions and/or discoveries of great importance in later centuries, thus boosting the development and the interrelation of the formal and factual sciences. Now both in geometrics and in physics, to mention two examples, an object is three-dimensional if it has a width, a length and a depth (Mortenson, 2006; Wrenninge, 2012; Lengyel, 2012; Akenine-Moller, & Haines, 2008). The two former constitute the 2D (abscises and coordinates, letters x e y) and the third depicted with the letter z. Currently, with these three numeric values, a dot can be depicted on a computer screen, inside an application aimed at generating three-dimensional animations. This minimal unit of information of digital graphics is what is called pixel. The space that surrounds the human being, at simple sight or under observation, is three-dimensional, but, in reality, there are more dimensions, as is the case of time. In the interactive design for multimedia systems it is a category which is called Panchronics (Cipolla-Ficarra, F., 2010). This category of design has its origin in the 90s, in the era of the usability of the interactive systems, when the synchronization between audio and video in the video, 2D and/or 3D animations, the location of a text and the shifting of a cursor on the text, etc. (Cipolla-Ficarra, 2012), was nonexistent in a myriad commercial multimedia systems, which were distributed all across our planet, that is to say, there was no synchronism between the static and the dynamic means. It is a category of interactive design which in the era of the expansion of communicability is a qualitative component which must be present in the interactive process of the user and the multimedia contents, the Kaluza-Klein theory (Cipolla-Ficarra, 2012). Originally it posited a space-time of five dimensions, (which is space is four dimensions, one of which is compact or microscopic dimension). In other words, it is the general relativity theory, which was proposed by Theodor Kaluza (1919) and perfected by Klein (1926), through which it is intended to unify gravitation and electromagnetism, using a geometrical model (Armstrong, & Green, 1985). Simultaneously, in a conventional Euclidean space, a finite physical object is contained inside a minimal cuboid, whose dimensions are called wide, long and height, or depth and height. In other words, it is related to the axioms of Euclid in geometry. Moreover, when such physical phenomena as gravity are considered, the theory of relativity (Einstein, 1995) tells us that the universe is a tetra-dimensional entity which includes as well spatial dimensions as time and other dimensions. Different
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