The virtualization of digital games input devices

Costantino Oliva

University of Malta
Media and Knowledge Sciences
Department of Digital Arts
Msida, MSD2080, Malta

costantino.oliva@um.edu.mt

Abstract

The predominance in interactivity is what distinguishes digital games when approaching the subject with medias in mind. This paper will focus on the input side of interactivity by providing a framework for an application of Lévy's theory of virtualization (1998) to the evolution of videogames input devices, from text based devices such as the ASCII keyboard to motion based ones like the Nintendo *WiiMote*. The evolution takes place thanks to processes of *virtualization* and subsequent *actualization*. The problematic knot of issues that generates the process of virtualization will be discussed and placed into the field of the *Virtualization of the Body*, with further examination concerning the concept of the *tool*, an actualization that is "fulcrum for the resolution of a class of problems". The input device becomes in this regard a platform of collective work for hardware producers, software designers and end users.

Even if it follows an historical perspective, this paper is not intended to be a detailed history of input devices. The framework will instead be applied to selected examples from different periods of the videogame's input devices evolution. An analysis of the different input devices' functionalities will be done using Swink's taxonomy (Swink 2009). Examples include William Higinbotham's *Tennis For Two* (1958), the first videogame with a dedicated input device, and *Colossal Cave Adventure* (Crowther and Woods 1976/1977), which used only text both as input and output. Other examples will consider portable gaming machines (*handheld* devices) and Nintendo's current generation of input devices, the *WiiMote* and the *Nintendo DS'* touch screen. For a better understanding of the topic, the paper will make use of visual data.

One of the general outcomes of virtualization is the fragmentation and specialization of knowledge, positively regarded in Lévy's theory. The conclusions connect it with the importance of new available input devices, highlighting their positive importance into the problematic dimension of the input device.

Keywords Virtualization, Input Devices, Lévy, Swink, Higinbotham, *Tennis for Two*