

Gestural Interaction in Music Video Games

»Every time I naturally sense that something is interesting, I try to connect each of my senses. I try to connect my visual senses with my auditory senses. I also want to connect these to the movement of my body and hands.« (Iwai 2006)

This article explains how gestures and the metaphors that lie beneath them are used in music video games. Gestural interaction is quite commonly used in new media art like the electronic instrument »The ReacTable« (Jordà et al. 2005, Kaltenbrunner et al. 2004) or the acoustic environment »A Small Fish« (Fujihata et al. 1999). Their tangible nature is significant for the aforementioned interfaces. The focus is put on the sense of touch that helps to interpret the visual cognition and gives the interface a graspable haptic quality. (Hornecker 2004). During the last years the use of tangible interfaces found its way into the home entertainment market. Be it the physical nature of Harmonix' hugely successful »Guitar Hero« or the rise of Nintendos portable console the Nintendo DS which sports a touch-screen interface or the mainstream appearance of accelerometers. The latter are used by two of the three »next-gen« consoles – Sony's PS3 and the Nintendo Wii, whose controller also has pointing capabilities. The significance of this move to tangible interfaces is underlined by the dominance in sales of Nintendo's latest consoles in the portable and the »next-gen« console-market.¹

These new interfaces open up lots of possibilities to games where play focusses on music. While the word play denotes similar concepts in the context of playing music and playing games, there are important differences; In a traditional sense game play is associated with fulfilling the challenge-response scheme presented to the player. Musical play is understood as a creative and originating process. Music video games have the potential to transcend the boundaries between those concepts by providing playful constructive environments for musical experimentation and exploration. Ideally they are easily accessible and give as much freedom as possible while demanding a higher degree of mastery for more sophisticated ways of expression (Levin 2000).

In this context gestures provide the means of expression. Gestures are the result of a cognitive process that combines a sequence of actions to a single mental unit (Buxton 1986). Using Aristotle's definition of a metaphor in the sense that a specific term stands for a superordinated set of similar terms or meanings (Aristotle translated in Bywater 1984), a gesture becomes meaningful when linked to such a metaphor. A set of gestures linked to suiting musical metaphors builds a vocabulary for the gestural interaction with music.

To build this vocabulary qualitative research has been conducted for this article. Several light weight prototypes that expose specific interactive qualities have been implemented on a Nintendo DS. Each interaction sketch ² features a specific gestural atom. Examples of gestural atoms for musical interfaces include the strumming of the guitar's bar in Guitar Hero or the tipping, sliding and throwing of the small Planktons in Electroplankton (Nintendo 2005) that act as »sound-agents« (Pichlmair & Kayali 2007). »Wario Ware: Smooth Moves« on the Nintendo Wii illustrates loads of interactive principles of the Wii controller by using metaphors, even though they were not always accurately used (Rusch 2007). Building such mini-games or even »micro-games« is well suited to describe specific basic gestural patterns. Their smallness and simplicity exposes the essence of the interaction (Gingold 2005). An extensive listing of the aforementioned gestural interaction patterns is presented in this article. These patterns provide starting points for the analysis and the design of music video games.

The researched gestural patterns show that there are lots of intuitive ways to devise interaction with music so the player is able to experience music through the game flow (Whalen 2004) rather than having to learn the rules and acquire the skills to play a real instrument. In the end this is something that video gamers have always yearned for – to obtain gratification by the illusion of control over a real world matter while still having to reach a satisfying degree of mastery. Be it skillfully steering a Formula 1 car to victory through the narrow turns of the Monaco Grand Prix, showing off your smashing skills with a tennis-racket in Wii Sports or impressing the audience with the euphonic mastery of a music video game made observable by the physical nature of the interaction.

¹ http://www.gamasutra.com/php-bin/news_index.php?story=13996 (05/2007)

² Scientific background on sketching interaction can be found in (Burdick 2003) and (Buxton 2007).

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