

Chapter 2

Enhancing Characters for Virtual Worlds and Interactive Environments through Human-Like Enhancements

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ABSTRACT

The work discussed in this chapter involves a proposal to add human like attributes (emotions in this instance) to characters in games and virtual worlds to enhance user experience. The chapter begins by defining these computer controlled characters in the context of both games and virtual worlds, followed by a discussion on the human like aspects currently being integrated into these characters by developers. The chapter continues by focusing specifically on a particular case study where emotional attributes were added to a conversational character in Linden Labs' Second Life, after which a pilot experiment was conducted to ascertain the user response. The results from the study show that there is some support to the notion that users do prefer interacting with emotionally responsive characters.

INTRODUCTION

Commercial games such as the World of Warcraft by Blizzard Entertainment, and virtual worlds such as Second Life by Linden Lab, share similarities in that they involve the user interacting with the virtual environment through the use of a

player-controlled character called an avatar. It is customary, and even more expected that not only do users control one of these avatars, but they have a degree of freedom to customize its appearance to reflect their own imagination, or to blend into the virtual world through the available character choices and customization options. Within the

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games domain, constraints by developers are often imposed to keep the mythos of the game intact, such as in the World of Warcraft where users have a limited set of custom avatar appearance changes to maintain the games flow in a fantasy setting of orcs, elves and related races. In some virtual worlds such as Second Life, users have a much greater degree of freedom to manipulate their avatar to allow it to appear as almost anything or anyone, through either buying in-world adaptions for their avatars, or creating customizable options themselves through in-world scripting. Though it might be expected that users choose to represent their real-world identity and personality in their avatar, it is customary that many users do not actually do this, and in fact enter the virtual world with virtual genders and supporting behaviors to create a virtual persona. This virtual persona means that it is often not clear how the avatar reflects the user mentally or physically when engaged in avatar-to-avatar conversation.

Avatars in virtual worlds such as Second Life and the World of Warcraft lack automatic facial expressions and bodily gestures unless the user specifically activates one through a keyboard shortcut or from a text prompt as shown in Table 1.

In Second Life these gestures can be customized through an in-built interface combining an avatar animation, with a particular sound and a

Table 1. Gestures in both Second Life and World of Warcraft

Gesture	Trigger in SL	Trigger in WoW
Bow	/bow	/bow
Clap	/clap	/clap
Muscle	/muscle	/flex
Stretch	/stretch	/yawn
Whistle	/whistle	/whistle
Dance	/dance1 to /dance8	/dance
Chuckle	/chuckle	/chuckle
Laugh	/laugh	/laugh
Shrug	/shrug	/shrug

textual output that can be allocated a short-cut key and textual que that in theory could represent a much broader range of human expressions. The fact still remains that it has to be manually activated by the user, and is further compounded when these same avatars are currently not implemented with lip-sync technologies to enable them to mimic the speech or textual chat that the user is currently engaged in. This lack could potentially affect the user engagement because according to emotion researchers such as Ekman (2009), human beings also communicate with their eyes, and passively observe faces and postures as part of the communication process and thus this simply cannot occur. Instead in Second Life the avatar looks like it is typing wherever and whatever it is doing at the time of a user chat situation, and in the World of Warcraft the avatar does nothing at all during user to user chat.

Though it would seem that users new to these virtual environments might think they have a high degree of freedom, all virtual worlds have constraints based on software, hardware and developer imposed limitations. These virtual world constraints have the effect that the user is constrained to the environment, its rules and the abilities of their avatar, but more increasingly developers are providing a greater degree of freedom to explore and perform tasks that are not combat orientated such as in the World of Warcraft where fishing, tailoring and cooking form part of possible activities, and Second Life where playing music, dancing and building are common occurrences. The careful planning of these constraints and available interactive elements are commonly what draws users to particular applications to provide a brief suspension of disbelief as they can develop their character over time to increase the interaction options available and their ownership of their virtual presence.

Whilst interacting through their avatar, users learn and use the available travel options such as flying, riding on machines or animals, and because of the immense size of some of the virtual

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