## (19) On Transmitting Emotions

## - Experiments on Multimodal Presence over the Internet

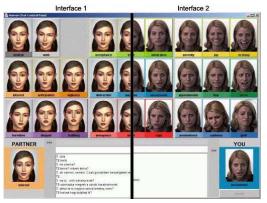
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## Abstract

In this paper we are presenting a multimodal chat interface displaying and transmitting emotions between chat partners, developed for an Internet chatterbot system. The system includes a 3D emotional chat interface that uses a complex emotional model based on R. Plutchik theory on basic emotions, published in detail and evaluated in our earlier publications. Based on this model, we have created and used one animation for each of the 24 emotions and the additional neutral state.

We conducted experiments to evaluate the effectiveness of various emotional animations (virtual 3D face animations and real human face clips, see Interface 1 and Interface 2, respectively, on the figure). We intended to determine the most natural layout and advantages of these interfaces. Both users could select an appropriate emotion when sending their message, and could simultaneously see their own and their partner's virtual face (see pictures in the bottom corners of



the figure). The results of the experiments will be utilized to enhance our chatterbot's performance.

75 students filled out questionnaires after participating in the 3 experimental scenarios: traditional chat, chat using Interface 1, and then Interface 2. As we previously expected, both interfaces were more popular than the traditional chat. Users applied twice as many emotion icons as they remembered. The average was 8.95 (s=3.13) and participants remembered only 4.62 used emotions by average. We concluded from our further experiments that chatters remembered only those emotions that had stronger emotional impact or were used frequently. When asked to estimate the number of used emotions, chatters did not think back to how they were using the interface, but rather recalled the feeling about the conversation, and of the emotional states they went through. In this sense we captured the emotional aspect of the presence phenomena since users "got lost" in the virtual world during the chat and they used the interface intuitively.