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The topic of dissertation: Interactive experience with extraversion measurement elements

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ABSTRACT

This doctoral dissertation takes the issue of measurement of psychological variables using virtual interactive environments, in particular for computer video games. The goal of this work is to explore the fields of usage of the previously mentioned environments in psychological measurement. Considering the indicated research goal, the main study issue is: can interactive environments with particular emphasis on games and applications be used to measure personality variables?

To find the answer to this question, I created a narrative computer game designed in a way to support the measurement of a specific personality variable. The personality variable I have chosen is the dimension of extraversion and introversion. The extroversion construct is well established in the scientific world and present in almost every personality theory. For this reason, I decided that it is the right variable for my research. The main hypothesis in this work says, that the result of the measurement of extraversion made by the application created will be positively correlated with the result of the measurement of the same variable using the traditional psychological tools like personality questionnaires.

In the practical part of my doctoral thesis, I familiarized myself with contemporary research, video game realizations and interactive experiences. Then I had to design and create a computer game which would fulfill the project goal. The next step was to do the research with volunteers, during which I measured their extraversion through the use of traditional psychological measurement tools and the application I created. The final stage of the practical part of my research was to collect the data and perform a statistical analysis of the collected data and conclusions.

The theoretical part of the doctoral dissertation is based on foreign and domestic literature. The first chapter is dedicated to the foundations of games and other interactive experiences as well as their place in the art world. I also present the personality theories and the issues of psychological measurement. The second part of the thesis presents the current state of knowledge in the field of psychological measurement with the usage of applications and games, the process of creating a virtual environment, a description of the conducted research and their statistical analysis. The final element is the summary and presentation of the conclusions.

The artistic part of this work is an application, which presents several different interactions such as exploration, dialogues and decision making. The only required device to navigate the game is a computer mouse. The application holds sounds effects, music, graphics and narration layer. The game's script is based on Pawlikowska-Jasnorzewska's poem entitled „Dream”. The dream theme has been chosen because of its flexibility, which allowed me to adapt the narrative layer to the measurement restrictions. The graphics are inspired by relief printing and surreal paintings. All the elements of the game except music and code were created by me. Some of the in-game player behaviors were collected in the program for further analysis.

The conducted research includes a comparison of measurement results from the application and the personality questionnaire. Forty-five people were surveyed. The test procedure required playing the game and then answering the IPIP-NEO-PI-R personality questionnaire based on the five-factor personality theory.

The result of the research shows that the main goal has been achieved. I created an application that, based on the user's behavior in the game, can recognize the extraversion of the user. The research was conducted with the participation of several dozen participants, and outcomes confirm the usefulness of virtual environments in psychological measurement. The effect of the work is satisfying and it opens new possibilities for the usage of interactive virtual environments in psychological measurement. Thus, this work is the basis for further reflection and research.

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