



Social Behaviours in Virtual Reality

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Abstract: *The new information technologies allow the generation of interaction environments that provide new communication mechanisms and exchange of information with a computer; Virtual Reality (VR) is part of this technological revolution. VR is a powerful technology whose applications in everyday life are endless, which is why deals with increasingly complex topics, among which are the behaviours of individuals in society. Virtual reality has managed to have a great psychological impact because it can trick the brain into experiencing sensations that they are not real, but that they seem it, allowing recreating situations with the objective of analysing, treating and influencing social behaviours. In this sense, VR allows even a higher degree of exposure than would be possible in vivo, given that manipulation of a virtual environment facilitates emphasizing those situations to investigate; that is why the sense of presence is a key aspect. This work proposal aims to analyse the social behaviours that could be influenced by the use of virtual reality, with the intention of incorporating it as an alternative tool to deal with problems related to social behaviours.*

Keywords: *Words Virtual Reality, Computer Graphics, Social Behaviours, Artificial Life, Virtual Characters.*

1. INTRODUCTION

Some time ago scientists predicted the imminent transition in the ways in which humans would experience communication of information. Virtual reality has allowed the generation of interactive environments that facilitate new exchange contexts and communication of information. Currently, VR applications consist of the immersion of the user in an environment generated by computer, giving rise to a natural idea to improve the impression of living in a simulated reality. It is known that the use of VR techniques and it does not alter the physical body but it does affect the perceptions and interactions of the human being, since this one develops efficiently in a real-time virtual environment using of their natural senses and abilities. In their Origins, VR was conceived as a purely technological tool for entertainment. It is worth remembering the first system of RV called Sensorama, which consisted in a demo of a bike ride around Brookiling.



Time after the target was oriented to develop scenario simulations for training (war or civilian). Subsequently, the wide diversity of uses of VR allowed its extension to other fields such as health and education. Within health, current applications range from 3D animations to study and treat patients suffering from post-traumatic stress disorders, phobias and addictions, to simulations of complex operations for practice of experienced residents and physicians. Within education, teaching-learning environments are carried out in virtual classrooms, where through network technology; it is possible to recreate learning situations individual and/or group, such as skills for students and pedagogical practices for teachers.

As is known, the human being is an individual who is constantly in a relational environment. Today, the world is going through a stage known as cyber culture, which consists of virtual communities that contribute to the socialization of people fostering an agile flow of information between them. This culture is highly influenced by the massive use of social networks and worlds virtual. Both are innovative products that take advantage of collective synergies, it is say, they arose due to the innumerable situations of life and the needs of one's own of the human being. That is why the use of technology and in particular VR implies the analysis of other factors such as social and psychological ones.

As a consequence, lately the process of considering the use of VR for the study and improvement of skills social abilities, cognition, and performance Social. Leveraging the power of VR in your ability to bridge both perceptual and temporal gaps is that many computer game companies have opted for base their games on social behaviours such as those of the Second Life type. An example is the game The Sims, which is a video game of social and strategy simulation in which each being virtual has its own personality and is directly controlled individually. In the same way other games have emerged where the environment and the soundtrack influence the psychology of the user. Within these games are the world-renowned Silent Hill, Tomb Raider, Dead Space, Eternal Darkness, and The Evil Within.

The development of these types of games by part of the entertainment industry and its application in the scientific field, has allowed science to analyse the simulation of different real-world situations and the corresponding behaviour of people in their experience with the simulated environment (cognitive-behavioural therapies). Of analysis, the study of interpersonal communication, assertiveness, the recognition of emotions, social anxiety, phobia, among others. depending on the situation simulated will be the reactions experienced by the user:

- 1) if the user is located in everyday environments such as a square, a bank, street, etc., the environment is expected expose the normal behaviour of the person (degree of civility);
- 2) if the user finds himself in a hostile environment (Tomb style Rider), you may need to explore and overcome their own fears (loneliness, height, etc.), something totally different than if the user is exposed to unexpected (random) situations, where he should not only overcome his fears already known but also unknown fears; with which their behaviour would be more similar to that of a soldier on a battlefield, where he has to make use of what he has learned during your training and your ability innate to face unknown situations.



VR technologies are an alternative is interesting for the analysis and evaluation of the different behaviours of the human being in various situations. More and more, the VR is proving to be a fundamental tool in the implementation and practice of global social changes such as acceptance of diversity, respect for the environment, solidarity, etc.

Lines of Research and development

Based on the above, turns out virtual reality become a powerful tool that makes it possible to assist and improve behaviours or behaviours social in various areas. It is considered of main interest to those areas where it is known or expects that VR can provide great benefits such as: the analysis of civic behaviour in everyday environments, coping behaviour in risky environments but at the same time controlled, and the behaviour of training in extreme risk environments in chaotic situations.

Civic behaviour: Knowing that his civility is, above all, culture of peaceful coexistence and solidarity, of commitment to their city and its inhabitants, daily virtual scenarios of life in society can be simulated and situations re-created to educate people to achieve the aforementioned coexistence. In other words, living in community respecting norms of peaceful coexistence, accepting the rules of the game of democracy and fundamental rights or constitutional values. By offering different activities increasingly, in terms of their complexity in interaction with VR devices and moral values that are intended to teach or reinforce, it is hoped to provide people with a set of qualities that allow them to live in society. These activities can be: recommending crossing a pedestrian at the corner and not in the middle of the block, picking up waste from the floor and take it to a garbage can or, from the point of view of a driver, give way to pedestrians, among others. Within an environment virtual reality, VR technology allows obtaining information about the location and people's situation. In this way, the user has the tools that will allow you to pay attention to their environment.

Coping Behaviour

VR can help people overcome or face common problems that require therapeutic attention. Psychological treatments for disorders such as phobias involve some type exposure to feared stimuli, either that it follows from behavioural explanatory theories that such exposure in the absence of the feared consequences will result in the extinction of the phobic reactions. Since VR us allows us to enter virtual environments, We can recreate situations that simulate the exposure of people to your phobias with the total security of not be really exposed. Starting with a low level of exposure and observing the patient's responses through of specialized devices, you can gradually raise the level until an almost real exposure to the phobia. Of In this way, VR becomes an ideal tool to help people with this or even other problems of everyday life.

Training Behaviour

All citizens' men, women, boys and girls have the moral obligation to prepare themselves in the education of the civil defence to be able to help each other to others in an emergency; as well as come in support of all the people, institutions and society in general. VR can organize, instruct, prepare and train the inhabitants in order to that they can adequately deal with in any emergency situation produced by international conflicts, internal commotion and unforeseeable disaster caused by nature or by the man. Using different VR devices, you can



recognize the situation Using different VR devices, you can recognize the situation of a person (both their physical capacity as well as calculate the probability of be able to perform actions successfully), and provide a list of suggestions in real time (through short phrases or key words transmitted by a sound system) of the possible actions most promising, in order to protect others and protect oneself.

Results Obtained

The working group, in addition to belonging to a research project of the UNSL has developed tasks within the framework of an ALFA III Project of the European Community, called GAVIOTA (Groups Academics for Oriented Visualization for Appropriate Technologies), in which the UNSL participated together with other universities from Latin America and Europe. Likewise, has obtained a subsidy from the Secretariat of University Policies for the concretion of the activities already started.

As a consequence, there has been developed a virtual character of the question-answer type, which has been contextualized within an immersive VR system, and a game under the crowdsourcing philosophy for the influence of civic behavior change. Currently, the actions are focused on the incorporation of new cognitive-behavioral techniques for the analysis of various social behaviours.

Data Availability

The data used is available from the corresponding author upon request.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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