## 論文の内容の要旨

論文題目 Philosophical consideration of the treatment of Posttraumatic Stress Disorder in Virtual Reality:

Trauma and formation of self-narrative in Virtual Reality context

(バーチャルリアリティにおける心的外傷後ストレス障害治療の哲学的考察: バーチャルリアリティコンテキストにおけるトラウマと自己語りの形成)

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The "virtual space" has been created since the beginning of the Internet and it has given many opportunities to create "virtual selves" that are self-representations of real selves in the virtual space. The virtual spaces present the opportunity to experience diverse features of one self and create stories about one self that are becoming increasingly sophisticated with the advance of computer technology. Such experiences of the virtual selves are transferred to the real self and become part of one's real life story. In this way, the narrative essence of the human self is supported and enhanced by the features of the virtual spaces.

The narrative essence of human life may experience major disturbances when a traumatic event occurs. People find difficulty to give meaning to their life story after the occurrence and often cannot live entirely in present reality. In this sense, trauma might be experienced as some form of a break in the narrative one has.

Interestingly, the fact that virtual spaces and namely the Virtual Reality can provide opportunity to recreate a traumatic experience in a simulated reality in order to process the traumatic experience; find meaning in the life story; and return to the normal functioning in real life, has great promise in helping humans cope with these experiences. In this sense the experiences in the virtual spaces transfer to the real life and help one recover his or her own narrative identity.

Such opportunity is provided by Cybertherapy which is based on simulations in Virtual Reality and is utilized for the treatment of PTSD. It works through the principles of

Exposure therapy by gradually exposing the patient to stimuli associated to the trauma he or she experienced. The habituation of these stimuli could help the PTSD patients reduce their traumatic responses.

Cybertherapy utilizes the versatility and flexibility of the Virtual Reality, as well as other characteristics such as immersiveness, safety, easiness to answer the various PTSD cases that exist. It seems that there are very different reasons for each type of PTSD. For example, the soldier PTSD and the natural disaster have very different causes and presumably have very different meanings for the people who are affected by them. Analyzing how the causes of PTSD have created the different types of disorder could help designing better therapeutic environments to answer each patient's needs.

However, on the basis of the idea of life story and narrative essence of the human self, it is possible to suppose that an added meaning would make the therapeutic results even more lasting through Narrative therapy. Therefore, the principles of Cognitive-behavioral therapy which include Exposure therapy and Narrative therapy would aid Cybertherapy to become more successful by helping to restructure the narrative and rationalize the traumatic events. This happens through creating coping mechanisms in the patients with the help of such approaches as reducing unhealthy thought patterns, teaching new information processing skills, and building skills for coping on one's own post-therapy. It seems that such therapeutic approach could also find ways to create deeper meaning and help the patients re-create their life story in a healthier way.

In this process the design of the therapy and the therapist leading the treatment play very important role; however, it is not necessary that Cybertherapy or therapy utilizing Virtual Reality answer all types and individual cases of PTSD. A truly successful therapy should explore the possibilities given by the Virtual Reality and adapt to each case of PTSD by not only exposing to stressful stimuli, but also by giving explanation of trauma, meaning of the life story for each PTSD patient who would accept recreating his or her narrative in the context of Virtual Reality.