

## Short-Term Physiological Evaluation of Augmented Reality System for Thanatophobia Psychotherapy

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**Abstract :** Exposure therapies encourage patients to gradually begin facing their painful memories of the trauma in order to reduce fear and anxiety. In this context, virtual reality techniques are widely used for treatment of different kinds of phobia. The particular case of fear of death phobia (thanatophobia) is addressed in this paper. For this purpose, we propose to make a simulation of Near Death Experience (NDE) using augmented reality techniques. We propose in particular to simulate the Out-of-Body experience (OBE) which is the first step of a Near-Death-Experience (NDE). In this paper, we present technical aspects of this simulation as well as short-term impact in terms of physiological measures. The non-linear Poincaré plot is used to describe the difference in Heart Rate Variability between In-Body and Out-Of-Body conditions.

**Keywords :** Out-of-Body simulation, physiological measure, augmented reality, phobia psychotherapy, HRV, Poincaré plot

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