

NEURO-TRACES

Artistic-technological research project
VR Application and Media Installation
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work in progress, 2020-2021

“Neuro-Traces” is an artistic-technological project, which experiments the relation between brain-linked technology and spatial translations. The work deals with a Neurofeedback based design, where the user experiences his/her brain activity in a continuous loop of influencing and being influenced by a responsive virtual environment.

Setup: The project consists in the development of a VR (Virtual Reality) Application. Here the user receives an EEG headset, which serves as input source, and a VR glasses, which works as interface for the output’s visualization. Both devices are connected in real time to each other through a computer, which evaluates the measured data received from the EEG and converts them to a three-dimensional formation. The application is based on the continuous feedback between input and output. The principle of neurofeedback, i.e. the ability to consciously regulate brainwave activity, can be tested in the project by the user in a creative and artistic setting. In contrast to classic applications, “Neuro-Traces” is not just about visualizing data and impulses, but rather experiencing them.

Scenario: The user experiments his/her own brain activity while being immersed in a continuously changing environment of abstract formations. These seemingly organic structures grow in a virtual, infinitely wide space and can be interactively experienced and transformed by the user itself. The performative properties of the visuals cannot be directly influenced, they can rather only be shaped indirectly over time: they connect, repel, grow together, intertwine and disentangle each other. Due to the individual data, each formation is unique in its form, personal and collective at the same time, allowing single as well as multiple users to connect in real time with each other and to form a common virtual environment. Boundaries become blurred, while physicality and gender leave the place to a continuously changing, collective formation of projected thoughts.

Vision: The main fascination of the project lies in the creative process that arises from the data exchange between humans and digital media. An individual space in which the user influences and is influenced by the simulation in a communicative and infinite loop. He/she becomes both a viewer and a performer, an experimenter of his/her own mental states, shaping his/her virtual environment in a self-reflective performative act.