

Mentally ill avatars

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Using VR headsets, healthcare professionals are able to conduct interviews with the avatars. Credit: Roberto Schirdewahn

Medical students at Ruhr-Universität Bochum (RUB) will have the opportunity to conduct psychiatric interviews with avatars in future. "This will enable them to practise with patients presenting the full range of symptoms and degrees of severity and to broaden the panorama,"

explains project manager, Associate Professor Paraskevi Mavrogiorgou from the clinic for psychiatry, psychotherapy and preventive medicine. Students wearing a virtual reality headset (VR headset) will be able to meet those avatars in a three-dimensional space—or, as experts call it, "exploration." The clinic is planning to start using avatars in the summer semester 2020.

The entire body talks

The diagnosis of mental disorders depends not only on the answers patients provide in the interview with a healthcare professional. The way they behave is likewise relevant: how does their voice sound? Do they look the other person in the eye? What's their posture like? Are they pacing restlessly? Is the face stony or animated? An experienced healthcare professional monitors and assesses all these aspects while talking to a patient, noticing changes to the facial expression within milliseconds," outlines Paraskevi Mavrogiorgou.

An international first

Medical students have to learn how to do that, which isn't always easy. "At the university clinic, we mainly see patients who are seriously ill," says the physician. "It is difficult to motivate them to take part in training sessions with the students. Plus, they are not the kind of patients whom the future doctors will most likely be seeing in the course of their career." Avatars are supposed to remedy that. "As far as we know, this has never been done anywhere yet; we are pioneering the field," says Professor Georg Juckel, Medical Director at the clinic.

The preparations have taken two to three years; now, the virtual characters are being fleshed out. "They need a biography, a case history," explains Paraskevi Mavrogiorgou. "And they must be able to

answer specific key questions in accordance with their respective mental disorder." Hundreds of pages with instructions and dialogues have been already compiled.

Each facial expression is individually designed

In order to create avatars with plausible physical features, the [medical professionals](#) intend to collaborate with a commercial enterprise specialised in visualisation for medical applications. The avatars' body language is to be adapted to the type of mental disorders they represent. They might be sitting, standing, lying or pacing during the interview. Their [facial expressions](#), too, are supposed to tell the trained observer something about the underlying disorder. "The programmer has to design each of these facial expressions individually," as Georg Juckel elaborates the immense complexity of the task. "It's the same as with Walt Disney's animated movies, or with computer games today."

The project team expects that the avatars will be taking their first steps in spring 2020. In summer semester 2020, students might begin conducting the first interviews with them.

Provided by Ruhr-Universitaet-Bochum

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