Combating phobias and psychotic disorders using virtual technology: that is what the work of Dr Willem-Paul Brinkman of the Faculty of Electrical Engineering, Mathematics and Computer Science involves. Of course one does not have any of these disorders oneself – or at least that’s what our reporter also thought.

As a white European, I glance from under my mask at the monitor on which my heartbeat and sweat production are being measured. The patterns of my heartbeat and sweat production have been recorded in the past. The researchers conducted the experiment with 15 patients and 24 white, European students and staff from TU Delft. They were all asked to walk through the pub and – as a kind of distraction – search for numbers that had been put on the chests of five random people in the pub.

"In the test with healthy test subjects, I reversed the roles," Brinkman explains. "This makes the stress factor the number of North Africans – rather than white – people present, given the fact that the test subjects available to me were mainly white. But the principle remains the same."

The small increase in fluctuations of heartbeat makes me feel any less comfortable. This is something I already knew about myself, but now I have proof. The pattern on the monitor remains the same.

"Ah, that’s what you think," laughs Brinkman, who is supervising the experiment in a completely darkened room in the Electrical Engineering, Mathematics and Computer Science (EEMCS) building. "The patterns of your heartbeat and sweat production have shown some real changes. They have become more irregular. You cannot see it with the naked eye, but we have computer programs that analyse it."

Brinkman can tick boxes on the screen with words such as ‘crying’, ‘angry’, ‘tense’, which are used to mark the behaviour of the test subject on a timeline. This can prove helpful in reconstructing the most awkward situations retrospectively. I am spared this ordeal, as there is nothing to tick on this occasion.

"In the virtual world, we encourage them to respond differently," explains Brinkman. "The threshold for staying in the tram for one more stop – we intended to also create a virtual world set in a tram – is lower because you know that there is no actual danger. The patient then realises that people eventually look away and there is actually nothing going on."

The virtual worlds still look quite artificial. "The virtual worlds still look quite artificial. Is that an area that still needs further work?" Prof. Van der Gaag. "No, it's not down to that," laughs Brinkman. "Of course, in order to make the virtual world appear more natural we would have preferred to use avatars that are more average in appearance, but we had no choice. We bought these avatars from an American company and these were the only figures they had. It would cost us a great deal of time and money to create them ourselves."