

Virtual stimuli help identify deviant sexual behaviors

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Virtual reality may be the key to predicting both the behaviour of sex offenders and the effectiveness of the therapies they have undergone, according to a study undertaken by Massil Benbouriche of the University of Montreal's School of Criminology. a protocol was recently developed combining the penile ring with a visual scanning test using stimuli presented by computer to measure the period of gaze on the erogenous zones presented in the images and the period of gaze alteration between these zones. It allows determining with greater precision certain behaviours associated with deviant sexual preference. "Now, by combining these methods with virtual reality, we are able to submit individuals to an immersive experience by placing them in a vault, that is, a cube with four to six large screens on which stimuli are projected," Benbouriche said. This image demonstrates a low intensity stimulus. Credit: Universite de Montreal

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according to a study undertaken by Massil Benbouriche of the University of Montreal's School of Criminology. "It is currently impossible to define the circumstances in which patients will – or will not – contain their aggressive impulses following therapy or treatment or prevent themselves reoffending," Benbouriche said. "By testing research protocols that can be applied using virtual reality, we are able to help empirically validate theories that could explain why offenders act on their impulses."

Applications of [virtual reality](#) in mental health, particularly for the assessment and treatment of [anxiety disorders](#), have dated back some 15 years. But it is only since 2006 that Philippe-Pinel Institute, where Benbouriche coordinates the virtual reality lab, has used it in forensic psychiatry to assess the profile of sexual offenders and the risks they pose.

Penile plethysmography had been the only way to determine the sexual preferences of [sexual offenders](#). It involves placing a ring around a man's penis to measure changes in circumference caused by visual or [auditory stimuli](#) presented to the individual. But the method is not without flaws. "The person can have control and blur the results by, among other things, not looking at the images," Benbouriche explained.

However, a protocol was recently developed combining the penile ring with a visual scanning test using stimuli presented by computer to measure the period of gaze on the erogenous zones presented in the images and the period of gaze alteration between these zones. It allows determining with greater precision certain behaviours associated with deviant sexual preference. "Now, by combining these methods with virtual reality, we are able to submit individuals to an immersive experience by placing them in a vault, that is, a cube with four to six large screens on which stimuli are projected," Benbouriche said. "In this way, we can assess what the individuals feel from their own perspective,

not a third party's." The technology also has the advantage of being able to create stimuli according to some characteristics of each evaluated offender – male or female, adult or child, skin colour, etc. – and in complex environments approximating the real world, such as a bar or private bedroom.

For now, virtual reality tests have been conducted to compare results obtained in patients with sexual deviations with those from non-delinquent individuals. "The results show that using virtual stimuli give similar results to what other methods have yielded in terms of assessing whether or not an individual presents deviant responses," Benbouriche said. "Our data are conclusive, and we know that virtual reality has been effective in treating various anxiety disorders and phobias and is promising in treating schizophrenia. Virtual reality may become a frequently-used clinical tool in [forensic psychiatry](#) within the next few years, both for judging how dangerous individuals are and for determining their ability to control themselves under various situations tested in virtual reality, thus allowing us to measure the effectiveness of therapies."

Provided by University of Montreal

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