

Looking ahead: in the FutureU project, participants use virtual reality to meet and talk to their older selves. The model in the AI-generated image is wearing a VR headset.



HEADSET TO THE FUTURE

TEXT: JANNIK JÜRGENS

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What leads to criminal behavior? At the Max Planck Institute for the Study of Crime, Security and Law in Freiburg, a team is investigating how virtual reality might help prevent crime. Their conclusion: looking ahead is what makes the difference.

Before Aniek Siezenga places the bulky headset on my face to transport me into virtual reality, she warns me: “Don’t be startled when you see your future self.” I nod. Then I dive into the world created by researchers working alongside Aniek Siezenga at the Max Planck Institute for the Study of Crime, Security and Law in Freiburg.

The FutureU research project investigates how young offenders’ ideas about the future course of their lives, and the expectations they attach to

them – their future orientation – affect criminal behavior. According to the theory developed by director Jean-Louis van Gelder and his team, future orientation has a decisive influence on whether people commit crimes or not. Someone preparing for their final school exams in order to go on to medical school is hardly going to ruin their chance of becoming a doctor by shoplifting.

But future orientation is not equally pronounced in everyone, says Siezenga, who conducted research at the Max Planck Institute in Freiburg until the end of 2024. “For one thing, you need the cognitive capacity to imagine what your life could look like ten years from now.” The environment people grow up in and their life circumstances also play an important role. Those who grow up in settings that place little value on education, or who

are exposed to crime at an early age, often have different priorities and less time to think about their future.

How can future orientation be promoted in young people – especially in offenders? The researchers propose an experiment in virtual reality. I put on the VR headset and find myself at a table on the top floor of a high-rise. Opposite me is a mirror, and in it I see my own face. Through the window, I look out at the office towers of a city. From the ceiling hangs a time machine, fitted with tubes, fans, and pipes; in front of me stands a digital calendar. A lever juts out from the table. With my slightly ghostly-looking hand, I pull it – and suddenly the date on the calendar jumps ten years into the future. Outside, air taxis buzz through the sky, and both the surroundings and the interior have taken on a futuristic look.

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IMAGE: MAXLAB FREIBURG



Simulated world: the research team developed an artificial world in which study participants meet their older selves.

SUMMARY

For a long time, it was assumed that crime stems primarily from a lack of self-control.

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The ability to think about one’s long-term future (future orientation) influences the decision to commit a crime.

An AI-based chatbot in an app could be used to train future orientation, which might lead to reduced offending, especially for entry-level offenses such as theft.

The mirror with my reflection has disappeared. Now my future self, ten years older, sits across from me. My hair is going gray, my hairline has receded at the temples, and my skin is pallid. I’m not startled – Siezenga warned me, after all – but I do feel a little uneasy. So, is this how I’ll look in ten years, at 46? Almost involuntarily, I start to imagine what life will be like then. But before my thoughts get more specific, a small robot appears. FI – short for Future Interviewer – asks me a series of questions in a squeaky voice: “Where will you be living ten years from now?” “What will you be doing for work?” “What

will you be proud of?” “What will you have achieved?” “What obstacles will you have overcome?”

Many studies show that people with short-term mindsets, and especially those who are impulsive and sensation-seeking, are more prone to commit crimes. This is especially evident in entry-level offenses: offenders focus on quick money, thrills, or status, and see crime as a way to get something in the moment. In doing so, they overlook that even a minor offense can have serious long-term consequences – such as a criminal record.

But such consequences are a long way off. “When the benefits are immediate and the costs lie further in the future, people who are very focused on the here and now are motivated to commit crimes,” says team leader Jean-Louis van Gelder, who holds doctorates in law and psychology. This is precisely where the FutureU project comes in: it aims to connect people with their future selves.

Long-Term Thinking Has a Preventive Effect

It works for me, though I tend to think long-term anyway. The virtual time

travel also showed a positive effect on adolescents. “Overall, our participants report less shortsighted behavior, which includes less criminal conduct,” says Jean-Louis van Gelder. He would not yet call the program a complete intervention ready for real-world use, but it is an important step toward effective crime reduction and rehabilitation.

Placing the emphasis primarily on future orientation could be described as a paradigm shift in criminology. For a long time, it was assumed that crime stems from a lack of self-control. People were said to tend to, for example, steal if they were not restrained by social bonds such as family, work, or friends.

Yet there were considerable doubts about this theory: why did the self-control paradigm not apply equally to everyone? Some became involved in crime despite having strong social bonds, while others did not, even though their bonds were relatively weak. Jean-Louis van Gelder, however, argues that future orientation, or the absence of future thinking, has a decisive influence on criminal behavior.

The idea came to him at a scientific conference in Chicago, while he was walking with a colleague studying the effects of short-term thinking on financial decisions. That colleague, Hal Hershfield, had already conducted a VR study in which participants saw avatars of their future selves in a mirror. Hershfield’s conclusion: when you think about the future, you’re more likely to save for retirement.

Van Gelder took up the idea and, in 2013, tested it with Hal Hershfield and Loran Nordgren in an initial foundational study with students. Participants saw themselves in a virtual mir-

ror as older versions of themselves and were given the opportunity to steal money from the experimenters. The result: those who saw themselves in the mirror stole money less often than the control group, who had not. “It comes down to what we call the ‘vividness of the future self,’ meaning people’s ability to imagine their future self,” says van Gelder. When they have a clear picture of their FutureU, it feels psychologically closer to them and is more likely to influence their decisions.

His team verified the results in a randomized controlled study with 321 students. Across multiple sessions, they interacted with their future selves in virtual reality. At the end of each session, the participants were asked to advise their present selves – from the perspective of their future selves. “It’s striking how detailed and candid some participants were when talking about their wishes and expectations,” recalls Aniek Siezenga, and she offers an explanation: “Although we actually know that the VR headset is only showing us a virtual world, our brain still goes along with it. That’s because, in perceiving the world, our brain relies first and foremost on vision, which functions as our primary sense.”

In another part of the same study, the participants used a purpose-built app to connect with their future selves and record their plans and goals for the future. “We wanted to know whether interacting with a smartphone app could also strengthen students’ future orientation,” says study lead Jean-Louis van Gelder. An integrated chatbot contacted them every day and asked questions designed to prompt reflection on the future. The chatbot also sent the students messages with psychological insights, such as the fact that personality can change over time. The students used the app for three weeks and were then asked how vivid their sense of their future self was and how connected they felt to it. They also indicated whether the intervention had made them more future-oriented and whether shortsighted behaviors (such

as smoking) had changed.

The research findings were mixed: participants felt more connected to their future selves and reported greater future orientation, but no change in their shortsighted behavior could be observed. “While there’s still room for improvement, the results underscore the impact of the intervention,” says Aniek Siezenga. “It can foster future-oriented thinking and action.” The team agrees that the app still

needs further development. Thanks to financial support from the European Research Council (ERC), the team is now developing an artificial intelligence (AI) chatbot that will be integrated into the intervention. “The goal is to create a realistic conversation partner that not only responds according to a script, but also engages with participants’ statements,” says Director van Gelder. In this way, he and his team hope to make an effective contribution to prevention. ←

“A lack of future orientation has an influence on criminal behavior.”

JEAN-LOUIS VAN GELDER

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Institute Director Jean-Louis van Gelder investigates what causes criminal behavior and how to prevent it, using virtual worlds.



PHOTO: BASCHI BENDER