Through a window, darkly…

Children playing with robo-dogs, adults admiring fake landscapes or planting virtual crops online. As our lives become ever more urban, does it matter that our experience of nature is often divorced from the real thing? **Alison George** quizzed psychologist **Peter Kahn** about our tangled relationship with the natural world

You study "technological nature". What do you mean by that?

It's technology that mediates our experience of nature: TV wildlife programmes, online games such as FarmVille, in which players plant and harvest virtual crops, digital projections of wood fires and skies for our homes, robotic dogs and electronic pets such as Tamagotchi. Technological nature is becoming increasingly sophisticated and pervasive. At the same time, we're destroying real nature very fast. These trends are transforming our existence. I want to find out what they mean for us, as human beings, what we gain and lose.

What got you interested in technological nature?

I was inspired by a study that set out to discover whether a view through a window influenced patients' recovery after surgery. Roger Ulrich of Texas A&M University found that people in a room overlooking a natural scene took less pain relief medication and left the hospital quicker than those with a view of a wall. It showed, empirically, a strong effect of nature on our lives. That's when I started wondering: OK, that's real nature compared with a brick wall – what if we got a technological representation of that natural scene? This led to my "room with a view" study.

PROFILE

Peter Kahn is associate professor of psychology at the University of Washington, Seattle, and director of the Human Interaction with Nature and Technological Systems lab. His latest book, *Technological Nature: Adaptation and the future of human life*, is published by The MIT Press

Tell me about your "room with a view" study…

Participants were assigned to one of three rooms. One had a window looking onto a beautiful nature scene. Another had no window but a 50-inch plasma display showing a high quality, real-time digital feed of the same scene, and the third just had blank walls. We asked the participants to carry out a series of tasks, while monitoring various physiological markers. For example, every time we asked them to do a new task their heart rate went up. We looked at how they recovered from this stress.

Did the people show different stress responses?

People in the room with a real window recovered from stress faster than those without, but there was no difference between the rooms with the screen and blank walls. If anything, I was expecting the technological nature window to be in-between: not as good as a real view, but better than nothing. Even though it looked like a window, it didn't confer the physiological or psychological benefits of a view of real nature. Technologists might argue that this is simply because the technology isn't far enough developed, and as yet there is no knock-out argument against this.

So what did you do next?

We put screens showing natural scenes in windowless offices for a six-week period. People loved the "windows". Every one of the participants wanted them back after they were removed. Compared with no exposure to nature at all, the technological nature window came out looking good.

You've also studied robotic pets. How do people react to them?

Keeping pets in urban settings can be difficult, so in coming decades there is going to be a push towards robotic pets, especially as roboticists improve their designs. Using Sony's robot dog Aibo, we studied how children interact with robotic dogs, compared with stuffed toy dogs and real dogs.

Our findings were mixed. In one study, about two-thirds of the children attributed mental states and moral status to Aibo, but said exactly the same things about the stuffed dog. Data about how the children actually interacted with the dogs suggested that they were not pretending when they engaged socially and morally with the robotic dog, but they were with the stuffed one. In another study, the

children clearly differentiated between Aibo and a real dog, but they still related to the robot in a way that was very doglike.

The children in your study were aware that the robotic dog wasn't real, but might this change in the future?
Yes. The question of what is real will become more important in the decades ahead, when technological nature becomes increasingly sophisticated and responsive to us. Eventually there might be a new ontological category of beings, that are both alive and not alive at the same time.

Isn't it important, though, for humans to interact and be in contact with real nature?
Leaving aside the relationship between our

physical well-being and nature, there is an even bigger question about our relationship with nature and what it means to live a deeply meaningful life. For example, what does it mean to us as humans if light pollution prevents us from experiencing the night skies? That is a hard thing to measure, but nevertheless it is important that we try to measure it.

How could being divorced from real nature directly affect us?
This goes back to the biophilia hypothesis, advocated by the biologist E. O. Wilson, namely, that humans have a hard-wired disposition to affiliate with the natural world. One of the questions that I deal with in my new book is whether experiencing real nature

is still a necessary part of the architecture of our bodies and brains. If it is, then yes, we still need to experience nature directly. Personally, I think this is true. It's not that we need any single experience, but as we start losing hundreds of experiences with the natural world, then we start hurting ourselves, I think, quite badly.

Won't we just adapt to a new kind of relationship with nature?
I've had many discussions with people who say that, yes, things are getting worse for us environmentally, but we're an adaptive species so we'll simply adapt. I argue, however, that just because we do adapt, it doesn't mean we're going to adapt well. If you put us in

"When we lose hundreds of experiences with nature, we hurt ourselves badly"

prison, we would adapt. We wouldn't die, but we wouldn't do well. I think that as we continue to degrade nature and distance ourselves from it, we are adapting, but I don't think we are necessarily thriving – we're like animals in a zoo.

So we may adapt to "technological nature" but you are pessimistic that it will ever truly mimic our experiences of real nature?
I think that in most cases, technological nature is probably better than no nature, but not as good as the real thing. That's the take-away message from my research so far. The analogy I use is from E. M. Forster's 1909 short story *The Machine Stops*, in which, in a future world, people live underground. A mother talks to her son by videoconference. She thinks it is "good enough" to be able to communicate with him at all, whereas the son yearns to see her in person, recognising all the nuances that have been lost in the digitally mediated form of communication.

Is there a way of not losing the nuances that come from direct experience of real nature?
Eventually, humans will be able to design technology offering substantive nature-like experiences. But my research tells me that, just as in Forster's story, these will always be diminished compared with real nature. If this is true, then we should think of technological nature as a bonus, not as a substitute. Otherwise we might come to believe, as we have already to some degree, that "good enough" is "good". n