



# LIVING IN A MATRIX

## A PHILOSOPHY PROFESSOR'S LIFE IN A WEB OF QUESTIONS

by Peter Nichols



Lisa Godfrey

By most accounts, Susan Schneider lives a pretty normal life. An assistant professor of philosophy, she teaches classes, writes academic papers and travels occasionally to speak at a philosophy or science lecture. At home, she shuttles her daughter to play dates, cooks dinner and goes mountain biking.

Then suddenly, right in the middle of this ordinary American existence, it happens. Maybe we're all living in a Matrix, she thinks to herself. It's like in the movie when the question, What is the Matrix? keeps popping up on Neo's computer screen and sets him to wondering.

Schneider starts considering all the *what-ifs* and the *maybes* that now pop up all around her. Maybe the warm sun on my face, the trees swishing by and the car I'm driving down the road are actually code streaming through the circuits of a great computer. What if this world, which feels so compellingly real, is only a simulation thrown up by a complex and clever computer game? If I'm in it, how could I even know? What if my real-seeming self is nothing more than an algorithm on a computational network? What if *everything* is a computer-generated dream world – a momentary assemblage of information clicking and switching and running away on a grid laid down by some advanced but unknown intelligence?

It's like that time, after earning an economics degree as an undergrad at Berkeley, she suddenly switched to philosophy. "I don't think my parents really knew what to do with me," Schneider recalls. Friends and acquaintances are sometimes amused by the tangled-up matrix of questions and answers that Schneider ceaselessly tries to unravel – all that wondering about free will and fundamental building blocks of reality and the Matrix thing. "It makes you a little weird," she admits,

## “I believe there are objective answers to the questions, but I’m a bit skeptical when it comes to our capacity to find them.”

“but this constant reflection on things gives you an enhanced appreciation of ordinary life.”

Aristotle taught that philosophy begins in wonder. For Schneider, wonder seems to have been a good start to a career as a philosophy professor as well. Last fall she taught a course on Philosophy and Science Fiction. “Science fiction stories fire the philosophical imagination,” she says. “You can use them to teach what I think are really deep philosophical concepts in a way that’s very compelling for students.”

The course uses thought experiments to think through implications of sci-fi ideas and puzzles depicted in various films and literary works. “Students are all familiar with *The Matrix*,” she explains as an example. “They immediately get the idea of how everything that seems real could be an illusion. It’s a quick way of making a really important philosophical point, and it opens the door to reflections about the limits of what we can and cannot know.” Schneider recently finished a book on these ideas titled *Science Fiction and Philosophy*. Currently in press with Wiley-Blackwell, the book highlights and explores classic philosophical problems – the nature of mind and how we know the external world exists, for instance – embedded in sci-fi themes like artificial intelligence, time travel, robot rights, teleportation, cyborgs, genetic modification and more.

“Philosophy is the enterprise of critically reflecting on life’s fundamental questions,” Schneider ventures. “The really good questions are ones that we haven’t been able to answer.” Indeed, many of them were posed by the ancient Greeks who gave birth to the tradition

of philosophical reflection in the West. What ultimately is real? What is the nature of mind? What does it mean to be a self? What can we know? “These questions don’t have obvious or uncontroversial answers,” Schneider observes. “I try to take the philosophical program as teaching students how to ask the right questions and conceive of what the possible answer space would be like.”

The answer space Schneider moves around in these days has been opened up by recent and fast-moving discoveries in the brain sciences. Besides being a member of the philosophy department, she is a faculty affiliate with Penn’s Center for Cognitive Neuroscience and the Institute for Research in Cognitive Science. Before entering grad school in philosophy, she spent a year as a fellow with the National Institutes of Health being brought up to speed in cognitive neuroscience at the University of Rochester. Not long ago, she and Max Velmans, a psychology professor at the University of London, completed the first-ever interdisciplinary reference book in the new field of consciousness studies. *The Blackwell Companion to Consciousness* is a fat volume of philosophical reflections that distill current thinking on the fact and the riddle of human awareness.

“I’m looking at the nature of mind from the vantage point of cognitive science,” she says. “There are putative explanations for the phenomenon of consciousness within cognitive science that suggest it’s just a matter of computation in the brain. So I guess the philosophical question is, Is that all there is?” What if thinking is information processing – a

storm of signals flashing across a network of neurons? That’s how face-recognition programs that scan passengers in airports work. Are we biological versions of that with a carbon-, rather than silicon-based, computational architecture? Or is there some kind of immaterial “soul” at the center of our self? “If we get a complete explanation of the causal origins of behavior in neuroscience, then maybe we don’t need to posit anything like a soul or a god,” Schneider speculates. “Can these computational approaches ever explain what’s distinctive about human thought? Generally, I’m interested in scientific descriptions of the mind and whether this stuff really answers age-old questions about the nature of mind and body.”

Much of what Schneider does in her reflections is articulate the scope and limits of the computational approach to mind, running arguments to their conclusions, which tell you, given a particular set of assumptions, what scientific and philosophical positions you are committed to and whether they are coherent. She is putting the finishing touches on a book that investigates how and if it is possible for our hopes and beliefs, ideas and inmost secrets to be grounded in the algorithms and connections and activation patterns of the computational brain. In “The Language of Thought: New Directions” and a series of related journal articles, she considers whether the panoply of human thought can be explained by current theories of brain science. “Grasping the limits of what cognitive science can explain” she notes, “is, without doubt, one of the most important tasks of contemporary philosophy of mind.” At the very

least, she hopes her reflections will help clarify and inspire renewed appreciation for the answer space surrounding the ideas being put forth by discoveries in cognitive science.

In everyday life, Schneider inhabits an “answer space” hollowed out amid a torrent of questions many of us don’t see. Maybe we *do* live in a computer program. Maybe reality is informational. In *The Matrix*, the character Morpheus holds forth on a longstanding and archetypal philosophy question. “What is real? How do you define ‘real’? If you’re talking about what you can feel, what you can smell, what you can taste and see, then real is simply electrical signals interpreted by your brain.” What if? All the questions about mind and reality and the limits of knowledge come pouring down once more, streaming through the assistant philosophy professor’s mind.

“I believe there are objective answers to the questions philosophers ask, but I’m a bit skeptical when it comes to our capacity to find them,” she comments. “I mean, why should we be confident that we’re good philosophers? Maybe we can’t get at the answers due to our physical makeup. Maybe a supercomputer that we’ll create one day will be better at doing philosophy than we are.” Or maybe Morpheus is right and that computer has already been built, and we’re living in it. What if reality is a virtual one – shadowy experiences cast by lightning leaps across a computer grid? What if Plato is right about our mistaken assumption that the parade of flickering shadows on the wall of a cave is reality?

“Everything is pretty bizarre when you think about it,” Schneider remarks. “It’s a neat thing to be just bewildered. It’s the human condition.”

## HUMAN CONSCIOUSNESS – IN 60 SECONDS

Suppose that you are sitting in a cafe studying before an exam. All in one moment, you taste the espresso you sip, consider an idea and hear the scream of the espresso machine. This is your current stream of consciousness. Conscious streams seem to be very much bound up with who you are. It is not that *this* particular moment is essential – although you may feel that certain ones are important. It is rather that throughout your waking life, you seem to be the subject of a unified stream of experience that presents you as the subject viewing the show.

Let us focus on three features of the stream. First, it may seem to you, put metaphorically, that there is a sort of screen or stage on which experiences present themselves to your mind’s eye. That is, there appears to be a central *place* where experiences are “screened” before you. Daniel Dennett calls this place the “Cartesian Theater.” Second, in this central place there seems to be a singular point in *time* when, given a particular sensory input, consciousness happens. For instance, there seems to be one moment in which the scream of the espresso machine begins, pulling you out of your concentration. Finally, there appears to be a *self* – a someone who is inside the theater, watching the show.

I challenge you to think about each of these features in more detail. Each is highly problematic. For instance, an explanation of consciousness cannot literally be that there is a mind’s eye in the brain watching a show. And there is no evidence that there is a singular place or time in the brain where consciousness congeals. Thought seems highly distributed throughout the cortex. So what and when and where is consciousness?

And, for that matter, why are we conscious at all? Suppose that cognitive science is correct that the mind is computational. Why does all this information processing in the brain, under certain conditions, have a felt quality? Couldn’t it simply go on “in the dark?”

So upon reflection, consciousness is both the most immediate aspect of our lives and one of the most mysterious.

*Adapted from Susan Schneider’s 60 Second Lecture. Watch a video at <http://www.sas.upenn.edu/60secondlecture>.*