

# The Science of ‘Surrogates’

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**Touchstone Pictures**

**Click for video:** A lifelike face is installed on a robot in a scene from “Surrogates.” Click on the image to watch a video about the trends behind the film.

Bruce Willis’ latest action movie takes place in a world where humans mostly stay behind closed doors and interact using lifelike cyber-substitutes. These robotic “surrogates” pass along all their sensations – during work, play and even sex – via virtual reality. In this wired-up world, you can be anybody you want to be through your surrogate: a healthier, younger version of yourself, or a super-athlete, or a supermodel. (Will that be male or female?)

So “**Surrogates**” is meant as pure science fiction, right? Wrong. The filmmakers and futurists behind the movie say they’re aiming for an only slightly enhanced version of present-day trends.

“In the near future, robots are going to start to look like humans,” said James Canton, founder of the San Francisco-based **Institute for Global Futures**. “I think within 10 years you’re going to have the world of the surrogates.”

You don’t even have to wait 10 years to experience the kind of virtual life that eventually goes so wrong in “Surrogates,” said the film’s director, “Terminator 3”

veteran Jonathan Mostow.

“Right now on the Internet you can go and you can shop, talk with your friends, get the news. You can express your opinion. You can pretty much live a full human life without ever leaving your home,” Mostow told me.

Not that the movie is a Michael Moore-ish diatribe against the Twitterpated lives that many of us lead nowadays. Like most folks in Hollywood, Mostow recognizes that the film will not fly unless it’s the entertaining, thrill-a-minute action ride theatergoers expect from a Bruce Willis movie. But he also means it to be something more.

“We do know just from the test audiences who have seen the movie that people are finding it very thought-provoking,” Mostow said. “It’s a little bit different from your typical Hollywood thriller.”

How is it different? Here’s an explanation from Canton, who helped out on the film project: “‘Surrogates’ is clearly a near-future vision when you mash up nanotechnology, and of course computing, robotics and the advances in materials science. All these technologies are converging so quickly, and that convergence is what ‘Surrogates’ covers so well, without getting into the details.”

If you want to delve into the real-life details, you can look at the research being conducted in Japan to create **sociable robots** suited to serve the country’s aging population. More signs of change can be seen on far-off battlefields, where the military is using surrogates ranging from **bomb-defusing robots** to **bomb-dropping drones**.

Other trends include the rise of online worlds such as “Second Life,” where **users guide avatars** through activities ranging from **cyber-boinking** to **virtual commerce** to the same **headaches** people experience in real life. Then there’s the milieu created by Twitter, Facebook and other online networks. Researchers say the personal interactions on social-networking sites can be just as **complicated** – and **occasionally just as boring** – as real life.

Canton said he’s already caught glimpses of the road ahead. Imagine, for instance, an extension of the force-feedback technology currently used to make video-game controllers shake and kick back in your hands. “I can tell you I’ve seen work in the labs that take force-feedback and make it totally sensory and cognitive,” he told me.

Like his fellow futurist **Ray Kurzweil**, Canton believes the time is fast approaching when **machines will be more intelligent** than natural-born humans – part of a phenomenon dubbed “the singularity.” But Canton thinks the age of the surrogates – a society in which machines are used as extensions of human capabilities rather than self-actuating entities – will come well before the singularity.

Baby-boom demographics could accelerate the current trend, he said.

“It’s likely that one of the key areas will be memory loss due to Alzheimer’s,” Canton told me. “Well before we have drugs to mediate memory loss, people will have both cloud-computing and wetware implants to help them with retrieving information. You’re going to see this emerge much quicker, and it’s going to be driven by baby boomers and baby-boomer economics.”

Canton isn’t saying that the approach of the singularity – or the surrogates – will be totally a good thing. In fact, that’s what the movie is all about. He said the Bruce Willis character “is challenged by a world that has been so dominated by these surrogates that the level of authenticity and humanness has been modified or even mutated.”

“That’s the big challenge,” he said. “There’s a wonderful social message in this that I think audiences will find both interesting and provocative as well as entertaining.”

That’s certainly the way director Jonathan Mostow feels about the film.

It’s not as if Mostow started out with a completely blank slate: The movie’s screenplay is based on “**The Surrogates**,” a graphic novel by Robert Venditti and Brett Weldele that came out in 2005. And that work, in turn, was inspired by “**The Cybergypsies**,” a book about online addiction in the dial-up modem era. (Those two works, by the way, make a perfect dual selection for the **Cosmic Log Used Book Club** – a semi-regular listing of books on cosmic themes that have been around long enough to turn up at libraries and secondhand-book shops.)

Even though the concepts that gave rise to “Surrogates” go back a quarter-century, Mostow told me the movie includes a few twists that should give today’s Twitterers, texters and Facebookers something to think about.