



ROBOT TWIN

“What constitutes human existence? That simple question sparked my research into robot development,” says Hiroshi Ishiguro, Osaka University professor and visiting group leader in intelligent robotics at the Advanced Telecommunications Research Institute International (ATR).

“After going through several development processes, I hit on the idea of trying to create my robot twin.” Sitting next to Ishiguro is Geminoid, his robotic doppelganger. The name Geminoid com-

bines “gemin,” meaning “twin” with the suffix “oid,” denoting likeness.

Unveiled in July 2006, Geminoid HI-1 is a model based on the appearance of Professor Ishiguro, and designed to reproduce his appearance and mannerisms. The project is an attempt to achieve telexistence, in other words to replicate the “existence” of an actual human and enable a person—in this case Ishiguro—to be in two places at once. Subtle body movements are automatically programmed, but eye



Left or right, which one is the real Professor Ishiguro? The one on the right is...Geminoid.

and mouth movements are synchronized with an actual human being who controls the robot. "This synchronization was one of the most difficult aspects of the development process," admits Ishiguro.

Geminoid has already attended research lab meetings in place of Ishiguro on an experimental basis, with the professor participating in the meeting by controlling the robot remotely. The next steps will be to develop a control interface capable of more accurate synchronization with human movement and



ABOVE: Geminoid's movements are remotely computer-controlled by an operator watching a monitor.

BELOW: Made from silicon, Geminoid's skin is ultra-realistic, right down to the way it feels.

to automate eye movement and other functions.

Ishiguro's achievements have been recognized globally as he was ranked 26th in the 2007 Synetics Top 100 Living Geniuses list, making him the top-ranking Japanese in the survey.

@ ON THE INTERNET

<http://www.irc.atr.jp/Geminoid/index.html>



PHOTOS: HANS SAUTTER • GEMINOID WAS DEVELOPED BY INTELLIGENT ROBOTICS AND COMMUNICATION LABORATORIES