Self and Circuitry

Walk down the average American street, and you won't pass many adults who are 100 percent human anymore—at least not physically. Our mouths are studded with dental fillings, posts, crowns and bridgework. More than a few of us have surgical screws, pins and staples holding together fresh or old injuries. Hordes have pacemakers, artificial joints, breast implants and other internal medical devices.

It's likely that if you asked people about merging their living tissue with unliving parts, they would rate the idea as at best odd and at worst horrifying. That so many of us have calmly done so can be attributed to two considerations. First, most of these implants—such as dental fillings—have been minor, minimally invasive and reassuringly simple. Second, pacemakers and other sophisticated implants are medically mandated—we accept them because they save our lives.

IMPLANTABLE VeriChip

This past year an exception to those rules quietly emerged. Applied Digital Solutions in Palm Beach, Fla., introduced its VeriChip, an implantable device the size of a grain of rice that fits under the skin. When a handheld scanner prods it with radio waves, the chip answers with a short burst of identifying data. The immediate applications are for security and identification.

The utility of implantable chips will only grow as they acquire more processing capability, allowing functions such as geolocation. It's easy to picture implantable chips developed for communications, entertainment and even cosmetic purposes. And one regulatory hurdle has already been removed: the Food and Drug Administration has ruled that as long as the current VeriChip does not serve a medical purpose, it will not be regulated as a medical device. (Future devices that broadcast with more power, however, might be subject to safety review. See the news story by David Appell on page 18.)

The new chips come ready-made with controversies. Should sexual offenders or other felons be tagged for permanent identification? What about resident aliens? Could employers require their workers to be implanted? Might laudable applications, such as preventing kidnapping, lead to civil-rights abuses?

All good questions about uses and misuses of the technology, but here's a more fundamental one: Why is there so little uproar over the underlying concept of putting complex microcircuitry into people? This implant isn't an inert dental filling or a lifesaving therapeutic. It's an electronic ID badge stuck permanently inside the body. A couple decades ago a product fitting that description might have been denounced as the first step toward Orwellian mind control and one-world government.

Ah, but 1984 has come and gone. Electronic devices, including ones that track our location, are now commonplace personal accessories. Movies and television have fed us images of friendly robots and cyborgs. The widespread popularity and casual acceptance of cosmetic surgery, body art and ornamental piercings show that the idea of altering the body has become less taboo. If the VeriChip is a landmark social development, then it is one that we've reached by small steps. New devices work their way into our bodies much as they work their way into the rest of our lives—by offering a sensible value. Almost without our realizing it, the merger of human and machine is becoming more routine. Technology gets under our skin in every sense.

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