



ESCALATING HIGH-HEEL SHOE PHOTOGRAPHS BY TONY CENICOLA

to be escorted up and down stairs because they tottered on stems so precariously high, to today's socialites and celebrities who mince along in their lofty Manolos, comfort and even mobility have always been an afterthought. Remarking upon the heel's despotic allure, George Bernard Shaw reportedly said, "If you rebel against high heels, take care to do so in a very smart hat."

Yet change may be afoot, as it were. Channeling the desire of working women everywhere, Wei-Chieh Tu, a graduate student in industrial design at the Pratt Institute in Brooklyn, has created an escalating high-heel shoe, the height of which can be set at six different levels, ranging from zero to 38 degrees, with the mere push of a button. "My wife wanted three-inch heels but refused to buy them because she wouldn't be able to wear them all day," Tu explains. "She told me, 'You're an industrial designer; you should do something about that,' and of course I listened to her."

The resulting shoe is sleek and futuristic, with a green tiered base that echoes Ferragamo's iconic layered rainbow platform of the late 30's. Tu, however, says he drew inspiration from the elegant, foldable Chinese hand fans he saw his mother and grandmother use when he was a child growing up in Taiwan. His ingenious creation not only marries fashion and function but also instills hope that high heels may soon cease to be instruments of torture. Need a towering presence for a meeting at work? Set your shoes at a higher altitude. Got a short date? Lower the shoes to half-mast. Want to add some glam rock to an evening out? Crank the shoes way, way up and saunter around. And best of all, when the vogue in heel

height shifts, as it invariably does, there's no shopping required; push a button and — *voilà!* — your heels will adjust. If only all heels were as easy to manage.

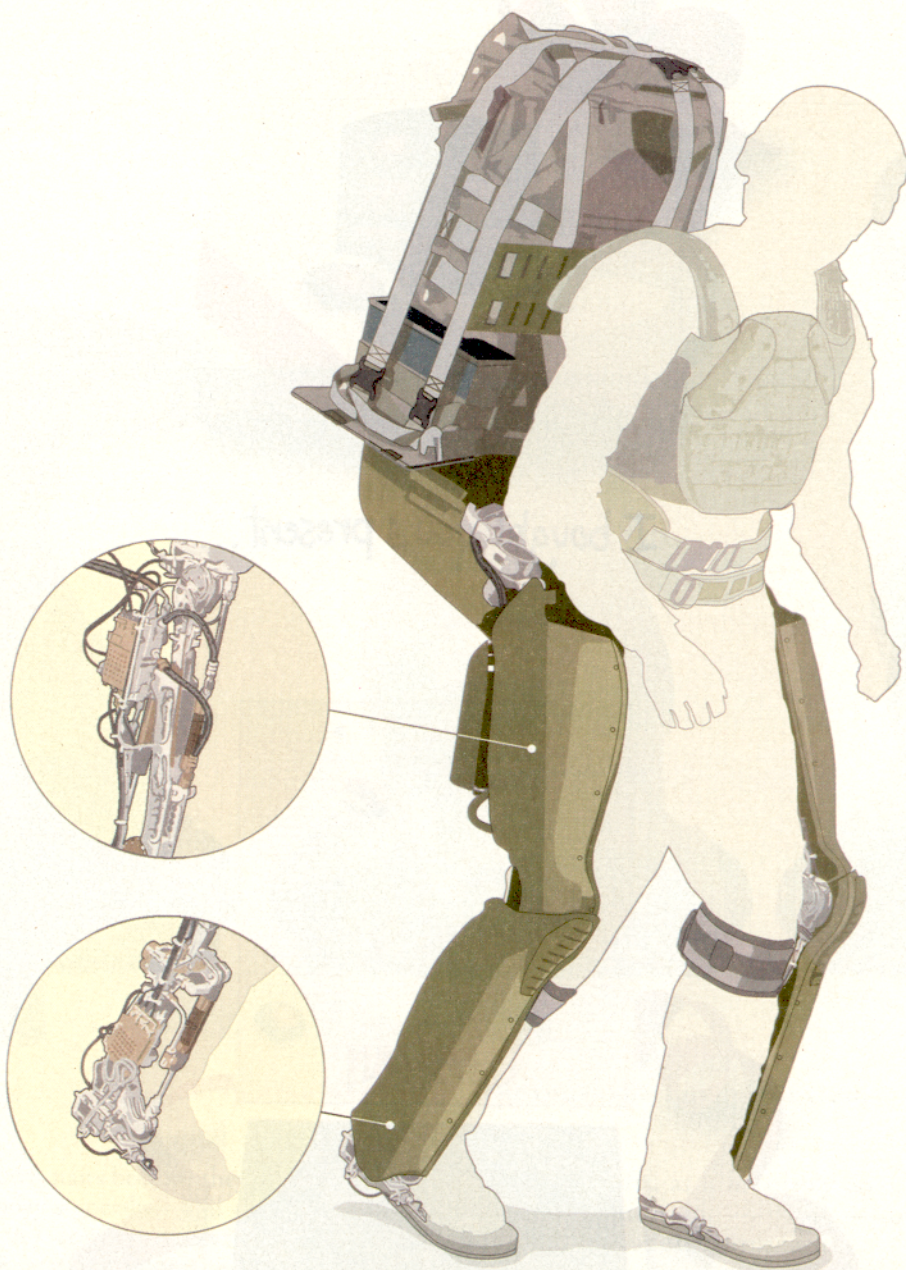
AMANDA FORTINI

Exoskeleton Strength / The sci-fi author Robert Heinlein had the idea first: in his 1959 novel, "Starship Troopers," soldiers stepped into suits of powered armor to make themselves stronger, faster and generally better prepared to fight off alien hordes. This year, Homayoon Kazerooni, an engineering professor at the University of California at Berkeley, made the idea a reality by introducing a set of high-tech leg braces called the Berkeley Lower Extremity Exoskeleton, or Bleex. Strap it on, and a load once backbreaking suddenly feels no heavier than a couple of copies of the Sunday paper.

Bleex is a set of modified combat boots, attached to what look like metal braces that snake up the sides of the legs. The prosthetics, which operate with the assistance of a Pentium-5-equivalent processor, are connected to a vest and backpack. About 70 pounds of gear can be crammed into the pack. But once the exoskeleton is turned on, it feels like only a five-pound load; the mechanical legs pick up the rest. Bleex 2, scheduled for June, should be able to carry 150 pounds and amble at a four-miles-an-hour clip.

The Pentagon — which has financed much of Kazerooni's research — says it wants the machine to literally ease the burden on American troops, who routinely haul more than a hundred pounds of gear into battle. But Kazerooni sees his exoskeleton as more than just a "war machine," he says. The mechanical legs

To help carry a backpack with 70 pounds of gear, the Berkeley Lower Extremity Exoskeleton uses more than 40 sensors and hydraulic mechanisms to distribute the load.



EXOSKELETON STRENGTH

might someday help the elderly get around, for instance. The idea of replacing Grandma's walker is a long way from science fiction. But at least it's real.

NOAH SHACHTMAN

Eyeball Jewelry / Gerrit Melles is soft-spoken and conservative in an I'd-never-get-a-tattoo-or-piercing sort of way, so he's a bit bashful about having created the latest craze in body modification: eyeball jewelry. We're not talking pierced eyelids or eyebrows — that's child's play at this point. We're talking jewelry placed directly in the eyeball.

Here's how it works. An ophthalmologist anesthetizes your eye, then makes a microscopic incision in the conjunctiva, the eye's transparent outer membrane. The doctor drops a tiny piece of jewelry (called JewelEye) into the incision, and the procedure is over. It takes 10 minutes and costs about \$4,000, and you spend the next week feeling as if you have a piece of sand in your eye. When the conjunctiva heals, you can't feel it (even when you rub your eye).

Melles, an ophthalmic surgeon with the Netherlands Institute for Innovative Ocular Surgery, uses the word "subtle" to describe

JewelEye: "It's not like you'll pass someone on the street and go, 'Whoa, what's in that person's eye?'" But it's impossible to stare at it when you're face to face. The jewelry is a small, round medallion gently curved to fit the eye. It rests just below the surface, held in place by the conjunctiva, like a charm on a string of tape. Melles stumbled on the idea while developing instruments for treating glaucoma. "I found a way to seal the eye after things in the outer layer of the eye," he says, "and I thought, 'I could not make special shapes people could wear for fun?'"



EYEBALL JEWELRY

with hearts and stars but also with everything from euro symbols to the David-Davidson symbols.

According to Melles, the infection rate is lower with JewelEye than with ear piercing, because the eye is sealed in the eye and not open to bacteria. It doesn't hurt after millions of blinks and eye rubbings, and it's