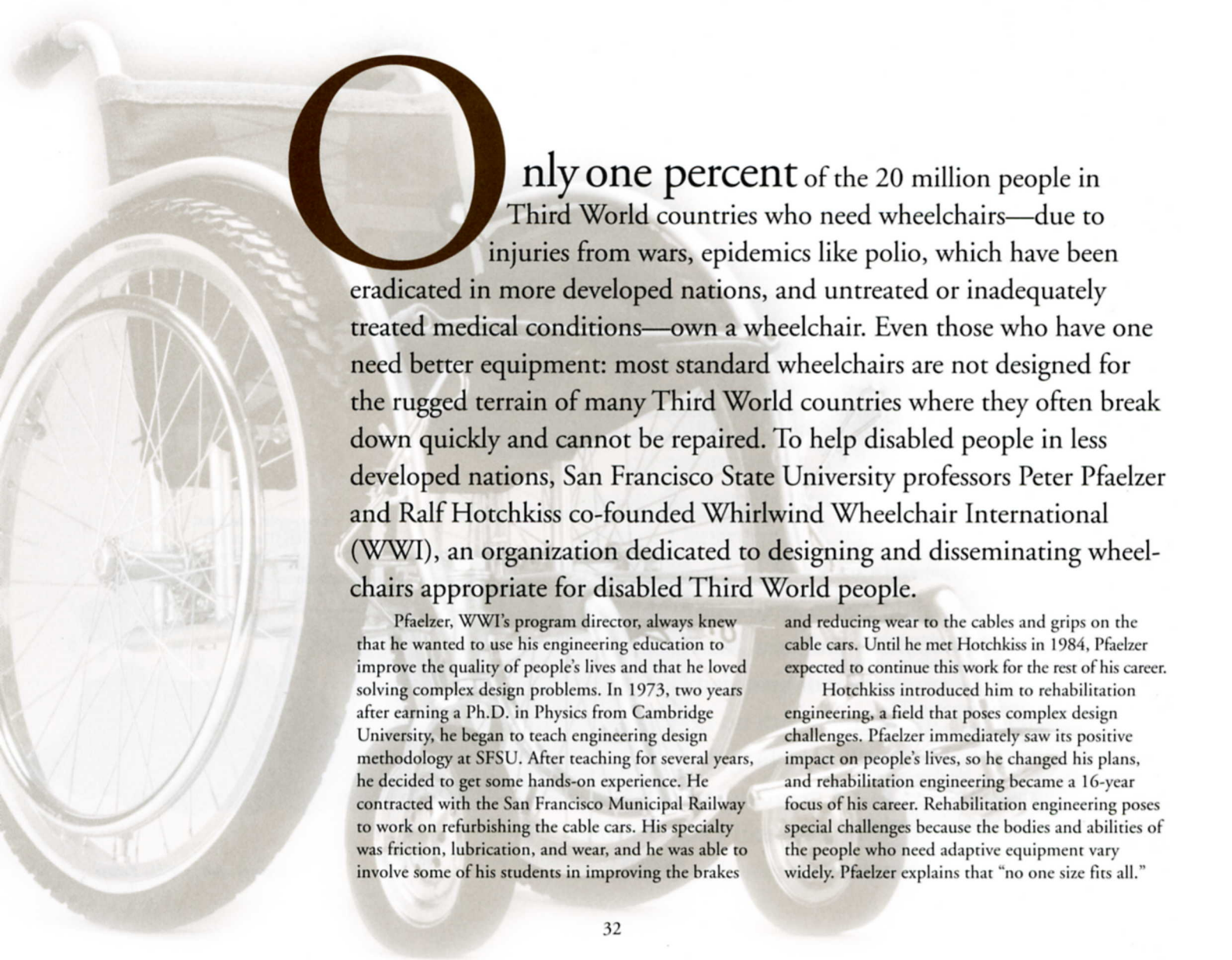


ENGINEERING A BETTER WORLD FOR PEOPLE WITH DISABILITIES

by Susan Baumrind



Only one percent of the 20 million people in Third World countries who need wheelchairs—due to injuries from wars, epidemics like polio, which have been eradicated in more developed nations, and untreated or inadequately treated medical conditions—own a wheelchair. Even those who have one need better equipment: most standard wheelchairs are not designed for the rugged terrain of many Third World countries where they often break down quickly and cannot be repaired. To help disabled people in less developed nations, San Francisco State University professors Peter Pfaelzer and Ralf Hotchkiss co-founded Whirlwind Wheelchair International (WWI), an organization dedicated to designing and disseminating wheelchairs appropriate for disabled Third World people.

Pfaelzer, WWI's program director, always knew that he wanted to use his engineering education to improve the quality of people's lives and that he loved solving complex design problems. In 1973, two years after earning a Ph.D. in Physics from Cambridge University, he began to teach engineering design methodology at SFSU. After teaching for several years, he decided to get some hands-on experience. He contracted with the San Francisco Municipal Railway to work on refurbishing the cable cars. His specialty was friction, lubrication, and wear, and he was able to involve some of his students in improving the brakes

and reducing wear to the cables and grips on the cable cars. Until he met Hotchkiss in 1984, Pfaelzer expected to continue this work for the rest of his career.

Hotchkiss introduced him to rehabilitation engineering, a field that poses complex design challenges. Pfaelzer immediately saw its positive impact on people's lives, so he changed his plans, and rehabilitation engineering became a 16-year focus of his career. Rehabilitation engineering poses special challenges because the bodies and abilities of the people who need adaptive equipment vary widely. Pfaelzer explains that "no one size fits all."

