out—to understand the kind of mindset that could turn a failure into a gift.

What did they know? They knew that human qualities, such as intellectual skills, could be cultivated. And that's what they were doing—getting smarter. Not only weren't they discouraged by failure, they didn't even think they were failing. They thought they were learning.

I, on the other hand, thought human qualities were carved in stone. You were smart or you weren't, and failure meant you weren't. It was that simple. If you could arrange successes and avoid failures (at all costs), you could stay smart. Struggles, mistakes, perseverance were just not part of this picture.

Whether human qualities are things that can be cultivated or things that are carved in stone is an old issue. What these beliefs mean for you is a new one: What are the consequences of thinking that your intelligence or personality is something you can develop, as opposed to something that is a fixed, deep-seated trait? Let's first look in on the age-old, fiercely waged debate about human nature and then return to the question of what these beliefs mean for you.

WHY DO PEOPLE DIFFER?

Since the dawn of time, people have thought differently, acted differently, and fared differently from each other. It was guaranteed that someone would ask the question of why people differed—why some people are smarter or more moral—and whether there was something that made them permanently different. Experts lined up on both sides. Some claimed that there was a strong physical basis for these differences, making them unavoidable and unalterable. Through the ages, these alleged physical differences have included bumps on the skull (phrenology), the size and shape of the skull (craniology), and, today, genes.

Others pointed to the strong differences in people's backgrounds, experiences, training, or ways of learning. It may surprise you to know that a big champion of this view was Alfred Binet, the inventor of the

IQ test. Wasn't the IQ test meant to summarize children's unchangeable intelligence? In fact, no. Binet, a Frenchman working in Paris in the early twentieth century, designed this test to identify children who were not profiting from the Paris public schools, *so that new educational programs could be designed to get them back on track.* Without denying individual differences in children's intellects, he believed that education and practice could bring about fundamental changes in intelligence. Here is a quote from one of his major books, *Modern Ideas About Children,* in which he summarizes his work with hundreds of children with learning difficulties:

> A few modern philosophers . . . assert that an individual's intelligence is a fixed quantity, a quantity which cannot be increased. We must protest and react against this brutal pessimism. . . . With practice, training, and above all, method, we manage to increase our attention, our memory, our judgment and literally to become more intelligent than we were before.

Who's right? Today most experts agree that it's not either–or. It's not nature *or* nurture, genes *or* environment. From conception on, there's a constant give-and-take between the two. In fact, as Gilbert Gottlieb, an eminent neuroscientist, put it, not only do genes and environment cooperate as we develop, but genes *require* input from the environment to work properly.

At the same time, scientists are learning that people have more capacity for lifelong learning and brain development than they ever thought. Of course, each person has a unique genetic endowment. People may start with different temperaments and different aptitudes, but it is clear that experience, training, and personal effort take them the rest of the way. Robert Sternberg, the present-day guru of intelligence, writes that the major factor in whether people achieve expertise "is not some fixed prior ability, but purposeful engagement." Or, as his forerunner Binet recognized, it's not always the people who start out the smartest who end up the smartest.