Mitchell Leslie, *Stanford Magazine*, July/August 2000

The Vexing Legacy of Lewis Terman

stanfordmag.org/contents/the-vexing-legacy-of-lewis-terman

To the Los Angeles juvenile authorities in 1923, Edward Dmytryk was an ordinary runaway trying to escape a vicious father who tore up his schoolbooks and clubbed him with a two-by-four. Mr. Dmytryk wanted his 14-year-old son back—if only, as the caseworker suspected, because Edward brought home vital income.

While the authorities deliberated, a letter arrived from Professor Lewis Terman, the nation's most famous psychologist and the man who had planted the term "IQ" in America's vocabulary. He wasn't a relative or family friend; he had never even met the boy. But the Stanford professor believed Edward deserved a break because he was "gifted"—a word Terman coined to describe the bright kids he devoted his life to researching.

Edward's high score on an IQ test had qualified him for Terman's pathbreaking Genetic Study of Genius. Terman, who had grown up gifted himself, was gathering evidence to squelch the popular stereotype of brainy, "bookish" children as frail oddballs doomed to social isolation. He wanted to show that most smart kids were robust and well-adjusted—that they were, in fact, born leaders who ought to be identified early and cultivated for their rightful roles in society.

Though the more than 1,000 youngsters enrolled in his study didn't know it at the time, they were embarking on a lasting relationship. As Terman poked around in their lives with his inquisitive surveys, "he fell in love with those kids," explains Albert Hastorf, emeritus professor of psychology. To the group he always called "my gifted children"—even after they grew up—Terman became mentor, confidant, guidance counselor and sometimes guardian angel, intervening on their behalf. In doing so, he crashed through the glass that is supposed to separate scientists from subjects, undermining his own data. But Terman saw no conflict in nudging his protégés toward success, and many of them later reflected that being a "Terman kid" had indeed shaped their self-images and changed the course of their lives.

Thanks to Terman's timely letter, for example, Edward Dmytryk went to a good foster home. You may have seen his name in the titles for *The Caine Mutiny,* one of the 23 films he later directed.

HINDSIGHT: Hastorf (right) took over the study after Sears (left) died in 1989. Terman “was a very nice guy,” Hastorf says, “but I have some things I would argue with him about.” (Photo: Courtesy Stanford Archives)

Forty-four years after Terman's death, the study is still going on. About 200 of his "kids" are alive, still completing periodic questionnaires on their health and activities and returning them to Stanford's psychology department. The Termites, as they're fondly nicknamed, have been tracked for nearly 80 years now, through nearly all the milestones of life. It's the longest-running survey ever carried out. And although Terman didn't conceive it as such, the study established a powerful new research approach: the longitudinal investigation, in which scientists follow a group of people over many years to learn how factors in early life influence later variables such as health and longevity.

Marred by design flaws, the genius study yielded few momentous conclusions beyond reassuring Americans that it's okay to be smart. Yet the archives have a value that Terman never envisioned: they provide an unmatched record of lives that spanned almost all of the 20th century. Researchers have pored over the Terman files to explore historical phenomena (did World War II veterans suffer lingering effects of combat?) as well as broader questions (does personality influence life span?). Social scientists have called the archives a national treasure because they tell the life stories of so many Americans.

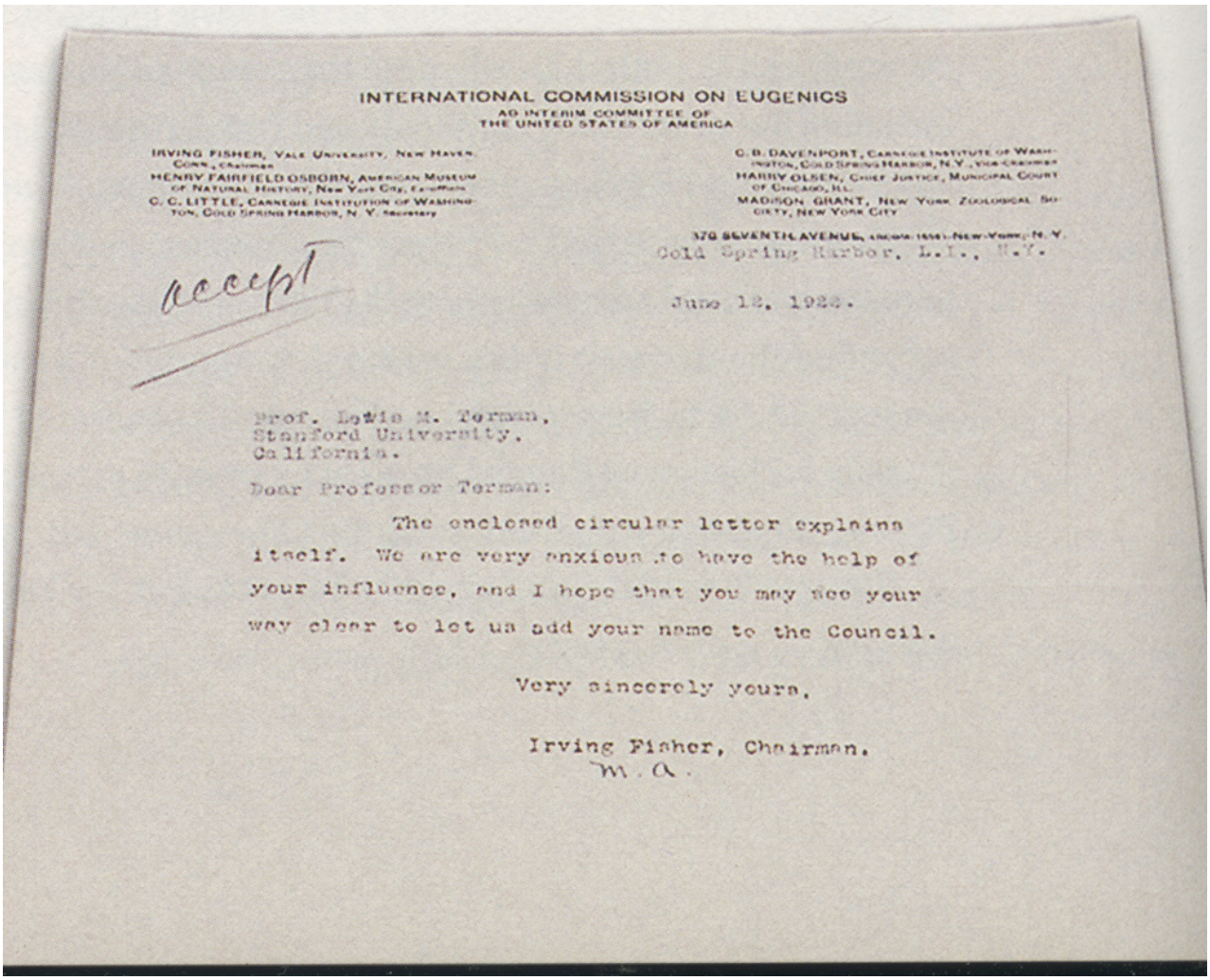
A story of a different kind emerges from Terman's own writings—a disturbing tale of the beliefs of a pioneer in psychology. Lewis Terman was a loving mentor, yes, but his ardent promotion of the gifted few was grounded in a cold-blooded, elitist ideology. Especially in the early years of his career, he was a proponent of eugenics, a social movement aiming to improve the human "breed" by perpetuating certain allegedly inherited traits and

eliminating others. While championing the intelligent, he pushed for the forced sterilization of thousands of "feebleminded" Americans. Later in life, Terman backed away from eugenics, but he never publicly recanted his beliefs.

Looking back, what are we to make of the man and his work? That's a question Al Hastorf has been grappling with. The former Stanford provost and vice president is the third director of the Terman study (he succeeded psychology professor Robert Sears), overseeing the project from his office in Jordan Hall. An amiable and restless man with a wry sense of humor, Hastorf has been pondering Lewis Terman's legacy for a chapter he's writing in a book on pioneering psychologists.

"There's a certain delicacy about talking about him," Hastorf begins, "because he was probably one of the first really big names Stanford had."

To most people at Stanford, the name Terman evokes another person entirely: Fred Terman, '20, Engr. '22, the engineering professor, dean and provost who helped launch California's electronics industry in the 1950s and who was Lewis Terman's son. But while Fred got his name inscribed on buildings on and off campus, Lewis probably had as much impact on people's lives, because he almost single-handedly introduced IQ testing in America.



INTERNATIONAL COMMISSION ON EUGENICS
AD INTERIM COMMITTEE OF
THE UNITED STATES OF AMERICA

IRVING FISHER, YALE UNIVERSITY, NEW HAVEN, CONN., Chairman
HENRY FAIRFIELD OSBORN, AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY, Ex-officio
C. C. LITTLE, CARNEGIE INSTITUTION OF WASHINGTON, COLD SPRING HARBOR, N. Y. Secretary

C. B. DAVENPORT, CARNEGIE INSTITUTE OF WASHINGTON, COLD SPRING HARBOR, N.Y., Vice-Chairman
HARRY OLSEN, CHIEF JUSTICE, MUNICIPAL COURT OF CHICAGO, ILL.
MADISON GRANT, NEW YORK ZOOLOGICAL SOCIETY, NEW YORK CITY

370 SEVENTH AVENUE, (ROOM 1006) NEW YORK, N. Y.
Cold Spring Harbor, L.I., N.Y.

accept

June 12, 1923.

Prof. Lewis M. Terman,
Stanford University,
California.

Dear Professor Terman:

The enclosed circular letter explains itself. We are very anxious to have the help of your influence, and I hope that you may see your way clear to let us add your name to the Council.

Very sincerely yours,

Irving Fisher, Chairman.
M. A.

EUGENICS AGENDA: Terman endorsed a 1922 circular calling for a movement “to stem the tide of threatened racial degeneracy.” (Photo: Courtesy Stanford Archives; photographed by Glenn Matsumura)

Terman was obsessed with intelligence. He had deep sympathy for the gifted, identifying with their yearnings and frustrations. This likely traced back to his childhood in rural Indiana, where he was the 12th of 14 kids in a prosperous farming family. Born in 1877, little red-haired Lewis preferred intellectual games and reading over sports or outdoor play and felt physically outclassed by his playmates, according to biographer Henry Minton. Back then, few farm kids stayed in school past eighth grade, but Terman was "fiercely ambitious for more education," as Sears, the study's second director, wrote in a biographical sketch. That drive, fueled by timely loans from his family, took Terman first to the local teachers' college, then to Indiana University and finally to Clark University in Massachusetts, a topflight school for psychology research. There, he completed a PhD dissertation comparing mental and physical abilities of smart and dull children. At the time, psychology had just established itself as a separate discipline from philosophy and was still seeking its course and methods.

Suffering from recurring tuberculosis, he moved in 1905 to the more equable climate of Southern California with his wife, Anna, and their two small children, Fred and Helen. For the next five "fallow years," as he described them, Terman worked as a high school principal and then as a professor of pedagogy at a teachers' college. In 1910, Stanford offered him a job in its fledgling department of education. He later moved to the psychology department, which he chaired for 20 years.

Eager to measure human minds, Terman plunged into intelligence testing soon after he arrived at Stanford. The original intelligence test had been designed five years earlier by French psychologist Alfred Binet as a tool to identify "slow" children needing special help. Terman and his Stanford colleagues translated Binet's test, adapted the content for U.S. schools, set new age norms and standardized the distribution of scores so that the mean score would always be 100. Terman called the new version the Stanford-Binet test.

With questions ranging from mathematical problems to vocabulary items, the Americanized test was supposed to capture "general intelligence," an innate mental capability that Terman felt was as measurable as height and weight. As a hardcore hereditarian, he believed that genetics alone dictated one's level of general intelligence. This vital constant, which he called an "original endowment," wasn't altered by education or home environment or hard work, he maintained. To denote it, he selected the term "intelligence quotient."

In 1916, Terman sprang his test on America. He released *The Measurement of Intelligence,* a book that was half instruction manual and IQ test, half manifesto for universal testing. His little exam, which a child could complete in a mere 50 minutes, was about to revolutionize what students learned and how they thought of themselves.

> ‘There’s a certain delicacy about talking about him, because he was probably one of the first really big names Stanford had.’

Few American children have passed through the school system in the last 80 years without taking the Stanford-Binet or one of its competitors. Terman's test gave U.S. educators the first simple, quick, cheap and seemingly objective way to "track" students, or assign them to different course sequences according to their ability. The following year, when the United States entered World War I, Terman helped design tests to screen Army recruits. More than 1.7 million draftees took his tests, broadening public acceptance of widespread IQ testing.

The Stanford-Binet made Terman a leader in a fervent movement to take testing far beyond the schoolhouse and Army base. Proponents considered intelligence the most valuable human quality and wanted to test every child and adult to determine their place in society. The "intelligence-testers"—a group that included many eugenicists—saw this as the tool for engineering a fairer, safer, fitter and more efficient nation, a "meritocracy" run by those most qualified to lead. In their vision of a vibrant new America, IQ scores would dictate not only what kind of education a person received but what work he or she could get. The most important and rewarding jobs in business, the professions, academia and government would go to the brightest citizens. People with very low scores—under about 75—would be institutionalized and discouraged or prevented from having children.

IQ tests and the social agenda of their advocates roused critics right from the start. To the journalist Walter Lippmann, the intelligence-testers were "the Psychological Battalion of Death," seizing unparalleled power over every child's future. Lippmann and Terman dueled in the pages of the *New Republic* in 1922 and 1923. "I hate the impudence of a claim that in 50 minutes you can judge and classify a human being's predestined fitness in life," Lippmann wrote. "I hate the sense of superiority which it creates, and the sense of inferiority which it imposes." In a sarcastic rejoinder, Terman compared Lippmann to the creationist William Jennings Bryan and other opponents of scientific progress, then attacked Lippmann's writing style as "much too verbose for literal quotation." Though he could never match Lippmann's eloquence, in the end Terman won the war: intelligence testing continued to spread. By the 1930s, kids with high IQs were being sent into more challenging classes to prepare for high-earning jobs or college, while low scorers got less demanding coursework, reduced expectations and dimmer job prospects.

The genetic study of Genius grew out of that social vision. Terman was disturbed that most Americans didn't share his high opinion of precocious children—"early ripe, early rot" was the way they put it back then. A decisive study, he thought, would sweep away that bias.

> He established the fact that bright people are normal people. The study was supposed to end there.

Using the Stanford-Binet and other tools, his assistants scoured elementary schools in Los Angeles, San Francisco and the East Bay, identifying a core group of 643 children with IQs of 135 or higher. Terman also enrolled subjects from earlier studies, along with hundreds of young people identified by volunteer testers or recommended by principals. He included the siblings of many participants, and even signed up his son and daughter.

By 1928, Terman had 1,528 subjects between the ages of 3 and 28. As a group, they were overwhelmingly white, urban and middle class. Nearly all lived in California. The gender imbalance—856 boys, 672 girls—puzzled Terman for the rest of his life (were boys smarter, or were teachers more likely to recommend them?). The group was lopsided in other ways as well: there were only two African-Americans, six Japanese-Americans and one American Indian.

Terman pledged not to release their names, and most never publicly declared their participation. Nonetheless, about 30 names have come out over the years—including several Termites whose involvement was announced only in their obituaries. The group included some prominent figures, like physiologist Ancel Keys, who discovered the link between cholesterol and heart disease; physicist Norris Bradbury, former director of the Los Alamos National Laboratory; *Life* journalist Shelley Smith Mydans, '36; and Hollywood big shots Edward Dmytryk and Jess Oppenheimer (see sidebar). We also know that two children who were tested but *didn't* make the cut—William Shockley and Luis Alvarez—went on to win the Nobel Prize in Physics. According to Hastorf, none of the Terman kids ever won a Nobel or Pulitzer.

For each child he enrolled in the core group, Terman amassed a thick dossier detailing physical health, interests, ancestry, reading habits, play, home life, household income and parental occupations. He wanted to know how many books the child's parents owned (on average, more than 300), and he dispatched assistants to interview the families and evaluate their homes. From this mass of data, he concluded that, by and large, these were well-rounded, happy and healthy kids. And in 1925 (before he had even finished enrolling subjects), he spread the word in a 650-page book, *The Mental and Physical Traits of a Thousand Gifted Children*. Terman had achieved his goal, says Hastorf: "He established the fact that bright people are normal people."

The study was supposed to end there. But to Terman, his children were like characters in a novel whose gripping first chapter he had just read. Enthralled, he decided to follow them as their lives and careers developed. And they obliged with a surprising amount of cooperation, filling out questionnaires about their sex lives and political attitudes, their earnings and religious beliefs, their physical and mental health, their satisfaction with life and marriage. Every five to 10 years, a new survey dropped into their mailboxes. The project inspired such loyalty that most Termites stayed in touch even under trying circumstances. Surveys sent out in 1945, for example, came back from servicemen around the world, including several who filled them out in foxholes at the front.

In all, Terman contributed to four books charting the changing attitudes, fortunes and health of the group. (A fifth report, by Sears and Carole Holahan of the University of Texas, came out in 1995.) He remained immersed in the study after he retired from Stanford in 1942, right up until his death in 1956. Sears—a Termite himself—renamed the project the Terman Study of Gifted Children and focused on how the group coped with aging. Hastorf, who took over after Sears died in 1989, sees his role today as maintaining the archives for others who want to use them. Most of the survivors are now in their 80s and 90s, he says, and the project will continue until the last one dies.

Like any pioneering effort, the study has its share of flaws. Some derive from Terman's own blunders: haphazardly selecting subjects, meddling in their lives and failing to establish a comparison group. The project also shares a constraint of all longitudinal studies, Hastorf notes: they're "locked in time," documenting a particular historical period but with limited relevance to other eras. All in all, the study tells us a lot about the development of some very bright Californians whose lives were roiled first by the Great Depression and then by World War II.

The kids proved remarkable in some ways and ordinary in others. One distinction was their avid pursuit of higher education. Two-thirds of the Terman men and women earned bachelor's degrees—that's 10 times the national rate for their time and all the more impressive because most did so during the Great Depression. The Termites also swarmed to graduate school. "There were 97 PhDs, 57 MDs and, sadly enough, 92 lawyers," Hastorf says. The women in the group, who reached adulthood in the 1920s and '30s, foreshadowed later trends. They had fewer children than others of their generation and bore them later in life. More of them went to college and graduate school, more had careers and more remained unmarried.

In other ways, the Terman kids were just run-of-the-mill 20th-century Americans. Some died young from accidents, diseases or suicide. A few were arrested; one went to prison for forgery. About 40 percent of the men served in World War II. Five men died in combat, while two were killed in war-industry accidents. As a group, Terman's kids got divorced, committed suicide and became alcoholics at about the national rate. They were no more—and no less—stable than the general population.

Some intriguing findings about their personalities emerged from a 1993 study of the archives. Reanalyzing the data, psychologist Howard Friedman of UC-Riverside looked for links between longevity and several personality traits. Conscientiousness, he found, had the greatest life-extending effect. Self-esteem had no effect, while cheerfulness actually seemed to shorten their lives—"perhaps because it . . . led people to ignore risks to their health," Friedman told the *New York Times*. The *Times* article concluded, "Score one for those pious voices of prudence: being cautious and somewhat dour is a key to longevity."

As a surrogate father—and a man with a point to prove—Terman yearned to see his kids become high achievers. Financially, the group lived up to his expectations. In 1954, American men in white-collar jobs earned a median salary of about $5,800, but their counterparts in the Terman group boasted a whopping $10,556.

Many who did well in their fields had received no boost from Terman beyond an occasional pat on the back and the knowledge that they'd qualified for his study. For others, like Dmytryk, Terman's intervention was life-changing. We'll never know all that he did for his kids, Hastorf notes. But it's clear that Terman helped several get into Stanford and other universities. He dispatched numerous letters of recommendation mentioning that individuals took part in his project. And one time, early in World War II, he apparently pulled strings on behalf of a family of Japanese-Americans in his study.

Fearing they were about to be interned, they wrote to Terman for help. He sent a letter assuring the federal government of their loyalty and arguing against internment. The family remained free.

From a scientific standpoint, Terman's personal involvement seems foolish because it probably skewed his results. "It's what you'd expect a mentor to do, but it's bad science," Hastorf says. As a conscientious researcher whose work got him elected to the National Academy of Sciences, Terman should have known better—but he wasn't the first or last to slip. Indeed, the temptation to meddle is an occupational hazard among longitudinal researchers, says Glen Elder Jr., a sociologist at the University of North Carolina. A certain degree of intimacy develops, he explains, because "we're living in their lives and they're living in ours."

It's difficult to gauge Terman's influence on the kids because so many are deceased or still anonymous. One survivor willing to speak on the record is Russell Robinson, a retired engineer and former director of aeronautical research at NASA Ames. He was a high school student in Santa Monica when, he recalls, "someone in the school system tapped me on the shoulder and said, 'Dr. Terman would like to test you, if you're willing.'" Robinson, now 92 and living in Los Altos, doesn't think being in the study significantly changed his life, but he did draw confidence from knowing that Terman thought highly of him. Several times during his career, he mentally invoked Terman to shore up his self-image. "Research is a strange business—in a sense, you're out there alone," he says. "Sometimes, the problems got so complex I would ask myself, Am I up to this? Then I would think, Dr. Terman thought I was."

WHIZ KID: Robinson, 92, says being a Termite boosted his self-esteem. (Photo: Courtesy Stanford Medical Center)

Others have echoed that sentiment, Hastorf says. In fact, the study meant so much to some of the subjects that the Terman project now runs entirely on their bequests.

Several Terman kids have cited a negative impact on their lives. Some complained of being saddled with an unfair burden to succeed, Hastorf says, while others thought that being dubbed geniuses at an early age made them cocky and complacent. For better or worse, a quarter of the men and almost a third of the women said they felt that being a Terman kid had changed their lives. And since Terman often did his meddling behind the scenes, others may have been influenced without ever realizing it.

His support of the gifted was heartfelt, but an equally fundamental part of Terman's social plan was controlling the people at the other end of the intelligence scale. Both were aims of eugenics, a movement that gained momentum early in the 20th century.

The eugenicists of Terman's day held that people of different races, nationalities and classes were born with immutable differences in intelligence, character and hardiness, and that these genetic disparities called for an "aristogenic" caste system. Traits like

feeblemindedness, frailty, emotional instability and "shiftlessness," they believed, were controlled by single genes and could be easily eliminated by controlling the reproduction of the "unfit." In the United States, the movement peddled a topsy-turvy form of Darwinism, claiming that the "fittest" (defined as well-to-do whites of Northern European ancestry) were reproducing too slowly and in danger of being overwhelmed by the inferior lower strata of society. America was jeopardized from within, eugenicists warned, by the rapid proliferation of people lacking intelligence and moral fiber. From without, the threat was the unchecked arrival of immigrants from southern and eastern Europe. Together these groups would drag down the national stock.

Terman's letters and published writings show that he shared these beliefs and argued for measures to reverse society's perceived deterioration. He was a member of the prominent eugenics societies of the day. "It is more important," he wrote in 1928, "for man to acquire control over his biological evolution than to capture the energy of the atom." Yet he wasn't a renegade howling from the fringe. Eugenics was "hugely popular in America and Europe among the 'better sort' before Hitler gave it a bad name," as journalist Nicholas Lemann puts it. Luminaries who supported at least part of the early eugenic agenda include George Bernard Shaw, Theodore Roosevelt, Margaret Sanger, Calvin Coolidge and Oliver Wendell Holmes Jr. In fact, Terman sat on the boards of two eugenics organizations with Stanford's first president, David Starr Jordan.

Early eugenicists managed to push through several laws. Thirty-three states, including California, passed measures requiring sterilization of the feebleminded. As a result, more than 60,000 men and women in mental institutions were sterilized—most against their will and some thinking they were getting an emergency appendectomy. In 1924, Congress set quotas that drastically cut immigration from eastern and southern Europe. Though pressure to stem immigration had come from many sources, including organized labor, the quotas had an undeniably racist taint. Terman cheered these efforts.

During the 1930s, as the brutality of Nazi policies and the scientific errors of eugenic doctrines became clearer, the eugenics movement withered in the United States and Terman inched away from his harshest views. Later in life, he told friends he regretted some of his statements about "inferior races." But unlike several prominent intelligence-testers, such as psychologist Henry Goddard and sat creator Carl Brigham, Terman never publicly recanted.

At least one eugenic measure proved as stubborn as he was. News of the Nazis' mass sterilization program did not put an end to the practice in the United States, where sterilizations of the mentally ill and retarded continued well into the 1970s.

Terman left a difficult legacy. On one hand, his work inspired almost all the innovations we use today to challenge bright students and enrich their education. As he followed the lives of intelligent kids, he also became their best publicist, battling a baseless prejudice. As a scientist, he devised methods for assessing our minds and behaviors, helping put the field of psychology on an empirical and quantitative foundation. He was one of Stanford's first nationally prominent scholars, and as a department chair for two decades, he transformed the psychology department from a

languid backwater into an energetic, top-ranked program. He established the longitudinal method and generated an archive of priceless data. Longitudinal studies have "become the laboratory of the social sciences" and are growing in importance as the population ages, unc sociologist Elder observes.

On the other hand, as biographer Minton points out, the very qualities that made Terman a groundbreaking scientist—his zeal, his confidence—also made him dogmatic, unwilling to accept criticism or to scrutinize his hereditarian views. A similar paradox existed in his social agenda. Terman was a visionary whose disturbing eugenic positions and loving treatment of the gifted grew out of the same dream for an American meritocracy.

> 'Sometimes I would ask myself, Am I up to this? Then, I would think, Dr. Terman thought I was.'

"He was a very nice guy, but I have some things I would argue with him about," Hastorf declares. His conclusion is that Terman was as much a product of his time as a force for change—and that, like many powerful thinkers, he was complex, contradictory and not always admirable.

Debate over heredity's contribution to intelligence remains divisive in America, particularly since racial differences in IQ scores persist—African-Americans on average score 15 points lower than whites. No one is sure why, and the gap does not disappear when researchers factor out obvious differences in socioeconomic status and remove culturally biased questions. The topic remains explosive; witness the eruption that followed the 1994 publication of *The Bell Curve,* which posits that the black-white score difference is mainly due to genetics.

As for what IQ scores can predict about a person's future, Hastorf offers a middle-of-the road position: the tests are pretty good at identifying "school-bright" children, those likely to perform well in ordinary school settings, but "on the issue of what makes you school-bright, it's obviously a combination of variables—your genetic constitution, your biological health, the motivation that your parents put into you, chance."

Though the Terman kids were handpicked for high IQ, the longitudinal results tell us little about the meaning of IQ, except for one study conducted by Terman's associate, Melita Oden. In 1968, she compared the 100 most successful and 100 least successful men in the group, defining success as holding jobs that required their intellectual gifts. The successes, predictably, included professors, scientists, doctors and lawyers. The non-successes included electronics technicians, police, carpenters and pool cleaners, plus a smattering of failed lawyers, doctors and academics. But here's the catch: the successes and non-successes barely differed in average IQ. The big differences turned out to be in confidence, persistence and early parental encouragement.

In other words, intelligence alone doesn't guarantee achievement. But then, you don't have to be a genius to figure that out.

Mitchell Leslie*is a science writer with the Stanford University Medical Center news bureau.*