

9. Legacies and Possibilities

The humbling thing about science is that no matter how much you think you know, it is a certainty that the next generation will know more.

Terry B. Strom

Chapter 1 introduced the concepts central to this book by examining the idea of difference through various lenses, some fictional, others real. In subsequent chapters, those concepts were placed in a historical context. The history of racism and eugenics reveals the power of unexamined ideas to shape not only scientific research and public policy but also the daily lives of ordinary people. In the spring of 1945, as World War II came to an end, many individuals and groups confronted that power for the first time. Alan Moorhead, a British journalist, expressed the feelings of many people, when he wrote after inspecting a Nazi death camp, “With all one’s soul, one felt: ‘This is not war. Nor is it anything to do with here and now, with this one place at this one moment. This is timeless and all mankind is involved in it. This touches me and I am responsible. Why has it happened? How did we let it happen?’”

Those questions haunted political leaders, scientists, and ordinary citizens in the years that followed. In a documentary series entitled *The Ascent of Man*, scientist Jacob Bronowski reflected on the role of scientists in the Holocaust as he stood before the crematorium at Auschwitz—a death camp where members of his own family were murdered. He told viewers:

It is said that science will dehumanize people and turn them into numbers. That is false, tragically false. Look for yourself. This is the concentration camp and crematorium at Auschwitz. This is where people were turned into numbers. Into this pond were flushed the ashes of some four million people. And that was not done by gas. It was done by arrogance. It was done by dogma. It was done by ignorance. When people believe that they have absolute knowledge, with no test in reality, this is how they behave. This is what men do when they aspire to the knowledge of gods.

Science is a very human form of knowledge. We are always at the brink of the known, we always feel forward for what is to be hoped. Every judgment in science stands on the edge of error, and is personal. Science is a tribute to what we can know although we are fallible. In the end the words were said by Oliver Cromwell: “I beseech you, in the bowels of Christ, to think it possible you may be

mistaken." I owe it as a scientist to my friend Leo Szilard, I owe it as a human being to the many members of my family who died at Auschwitz, to stand here by the pond as a survivor and a witness. We have to cure ourselves of the itch for absolute knowledge and power. We have to close the distance between the push-button order and the human act. We have to touch people.¹

How do we as individuals and as citizens cure the "itch for absolute knowledge and power"? How do we close the distance between the "push-button order and the human act"? This chapter explores such questions at a time when science is closer than ever to realizing Francis Galton's dream of "weeding out inferior traits and promoting superior qualities." Chapter 9 also helps us understand, as German historian Detlev J. K. Peukert once wrote, "The shadowy figures that look out at us from the tarnished mirror of history are—in the final analysis—ourselves."

The first two readings in this chapter return to the questions of Chapter 1: How do we as members of a society decide which differences matter and which do not? How do those decisions shape our ideas about what it means to be a human being in the 21st century? What is the role of a citizen in a modern, scientifically advanced society? The readings that follow apply those questions to current discussion on the relationship between science and society. Each of these readings is followed by suggestions for independent research or group projects. In tackling one or more of these investigations or designing one of your own, think carefully about what it means to be human in the world today. How do your ideas about humanity shape the way you define your role as a citizen in a democracy? How do they shape your values and beliefs? Why do you think scientists like physicist Leon M. Lederman frequently remind us that although science gives us a "powerful engine," in the end it is we who "steer the ship"? How can we best "steer that ship" at a time of truly revolutionary changes in science and medicine?

1. *The Ascent of Man* by Jacob Bronowski. Little, Brown, and Co., 1973, pp. 370, 374.

The Unknown Citizen

Reading 1

In 1940, in the midst of World War II, W. H. Auden reflected on the role of a citizen in a modern, scientifically advanced society in a poem he titled “The Unknown Citizen (To JS/07/M/378 This Marble Monument Is Erected by the State).”

He was found by the Bureau of Statistics to be
One against whom there was no official complaint,
And all the reports on his conduct agree
That, in the modern sense of an old-fashioned word, he was
saint,
For in everything he did, he served the Greater Community.
Except for the War until the day he retired
He worked in a factory and never got fired,
Yet he wasn't a scab or odd in his views,
For his Union reports that he paid his dues.
(Our report on his Union shows it was sound.)
And our Social Psychology workers found
That he was popular with his mates and liked a drink.
The Press are convinced that he bought a paper every day
And that his reactions to advertisement were normal in every
way.
Policies taken out in his name prove he was fully insured.
And his Health-card shows he was once in hospital but left it
cured.
Both Producers Research and High-Grade Living declare
He was fully sensible to the advantages of the Installment Plan
And had everything necessary to the Modern Man,
A phonograph, a radio, a car, and a frigidare.
Our researchers into Public Opinion are content
That he held the proper opinions for the time of year;
When there was peace, he was for peace; when there was
war, he went.
He was married and added five children to the population,
Which our Eugenicist says was the right number for a parent of
his generation.
And our teachers report that he never interfered with their
education.

Was he free? Was he happy? The question is absurd:
Had anything been wrong, we should certainly have heard.¹

CONNECTIONS

Who holds power in Auden's "Greater Community"? What is the role of a citizen in that community? What is the relationship between science and society in that community? What is the role of a citizen in that "Greater Community"?

How would leaders in the American eugenics movement have answered the questions Auden asks at the end of his poem—"Was he free? Was he happy?" How might Jacob Bronowski (Introduction) answer them? How would you answer those questions? Why do you think Auden calls the questions "absurd"?

In the 1920s, a number of countries, including Britain, France, and the United States, built monuments to an "unknown soldier" who died in battle during World War I. For centuries, nations had built monuments to honor kings, generals, and other leaders. Now they went to great lengths to choose an anonymous warrior from the millions who died on the battlefields. How is a monument to an "unknown soldier" different from one that honors a particular individual? How is such a monument similar? Why has Auden chosen to honor an "unknown citizen"? What is the moral or lesson of Auden's "monument"?

In 1999, physicist Leon M. Lederman told a group of high school students, "Modern science, however abstract, is never safe. It can be used to raise mankind to new heights or literally to destroy the planet. . . . We give you a powerful engine. You steer the ship." Compare and contrast his definition of citizenship with the one Auden describes. What differences seem most striking? How would you describe the role of a citizen in the world today? List the attitudes and values that mark a "good citizen" in a democracy. Record your list in your journal. You may wish to revise or add to it as the chapter progresses.

1. "The Unknown Citizen" by W. H. Auden. Copyright © 1940 and renewed 1968 by W. H. Auden. From *Collected Shorter Poems*. Random House, 1968.

“The Whole Is Not the Sum of Its Parts”

Reading 2

In 2000, scientists announced the completion of “the first survey of the entire human genome.” That accomplishment brought science closer than ever to the kind of genetic engineering described in an episode of *Star Trek: The Next Generation* entitled “Masterpiece Society.” (See summary on pages 31-32.) In that episode, the crew of the starship *Enterprise* visits Moab IV, a planet that has built a utopia much like the one Francis Galton, Charles Davenport, Harry Laughlin, and other eugenicists longed for. The crew’s encounter raises important questions about what it means to be human. It also prompts reflection on the extent to which our genes decide our future.

Genes are the stretches of DNA that code for the structure of proteins. They are found in every cell of our body. To some, like the people of Moab IV, they are the “book of life”—they determine one’s fate, one’s destiny. Sociologist Barbara Katz Rothman is among those who disagree. She notes, “If genes are the ‘book of life,’ we have to realize that that book is constantly being written and rewritten by life.” She explains:

[Who] am I? . . . I’m a person in history, a person standing at a particular moment in time, living a life and trying to understand it.

I’m a Jew who’s just been to Germany again, to talk about prenatal testing and its possible eugenic consequences. The Germans are like children who’ve just touched a hot stove. Americans may talk cheerfully about how genomics is going to bring about medical revolutions, but Germans have a hard time using the language of genes and the language of politics in the same sentence without getting nervous.

I’m a mother. . . . The son I gave birth to twenty-six years ago is gay. A “gay gene” would get me off the hook, loved ones have reassured me. It can’t be my fault if it’s “genetic.” Fault? Is my son’s sexuality an error that needs explaining, blame, forgiveness? Why a search for a gay gene? Are genes gay? Or are people? Or, actually, are people gay, or is gay just one of the ways of thinking about categorizing entire people based on parts of themselves? Ah, the complexities.

I’m a white woman who’s learned to function as a black mama: my youngest child, mine by adoption, is African American. What I thought I understood about the way race is constructed in America has been put to the test these past eleven years. There’s a lot to be

said for “identity politics,” for acknowledging that people learn from their actual experience in life. I’m not black—sometimes it surprises me when I look in a mirror and see I’m just as white as ever—but I’m a stakeholder in the black community in a way I was not before.

I’m still the child whose daddy died of cancer, and the woman whose stepfather did the same. I have all the cancer fears of anyone in this society and then some. I know all the warning signs and see warnings where there are no signs at all.

I’m a sociologist, trained and educated to avoid reductionism in all things. Social systems aren’t just the people who make them up; they have rules and characteristics of their own, things you can’t understand by looking only at individuals. Trees stand still, I remind my introductory sociology students: trees are very geographically stable life forms. A tree will be just where you left it. Forests move. Looked at over time, forests move across the face of a continent. Each tree lives or dies just where it is, and the whole moves. A whole is not just the sum of its parts. A person is not just the sum of his or her genes.

Like you, like everybody, I’m very complicated, filled with contradictions, stories, memory, and history. I’m more than my DNA, more than a collection of proteins. And I’m bothered, worried, saddened, sometimes frightened by a metaphor for personhood that sees us as just “information.” My concerns, and yours, about the new genetics are not just some ethical obstacles to be overcome so that they can go ahead and cure cancer and all that. What we’re concerned about here is not just how much of who and what we are is predetermined in a set of codes for proteins. What is at issue is what it means to be a person, and how we can live our lives as individuals, as families, and as communities of people.¹

CONNECTIONS

Watch “Masterpiece Society” again or reread the summary on pages 31-32. How do the people of Moab IV decide which differences matter and which do not? How have those decisions shaped their understanding of what it means to be human? How might other eugenicists have regarded their choice? How does Barbara Rothman view them? How has your study of the American eugenics movement affected the way you would regard them? What has your study taught you about the consequences of such choices?

Barbara Rothman describes herself as “a person in history.” How does she describe the complications of life at this “particular moment in time”? What does she suggest that we can learn from history about the forces and the choices that brought us to this moment? What does she suggest about the power of the ideas that energize social and religious movements?

Rothman asks, “Are genes gay? Or are people? Or, actually, are people gay, or is gay just one of the ways of thinking about categorizing entire people based on parts of themselves?” How would you answer her questions? What do your answers suggest about the way societies determine which differences matter?

Rothman teaches her students that trees stand still but forests move. What idea is she trying to convey? How does it apply to your study of racism and eugenics? If the whole is not just the sum of its parts, what is the relationship between the whole and its parts? What is the relationship, for example, between the individual and society? Between a person and his or her genes?

Rothman describes Germans as nervous about the political implications of genomics. Benno Müller-Hill, a molecular biologist at the Institute of Genetics at the University of Cologne, is among those Germans. He wrote in 1993:

The German human geneticists . . . abandoned their patients to criminal politicians. . . . Can it happen again? Certainly not the way it happened then. But I think there is another, more modern way to abandon patients. If genetic differences lead to drastic differences in insurance rates and employment, the human geneticists who have discovered genotypes and all other geneticists will be accused of not having stopped this process to create a genetic “under-race.” Certainly the circumstances will differ drastically from those in Germany. No Führer will be responsible. It will be the market place with all its participants that will possibly create such an outrage.²

What similarities does Müller-Hill see between the past and the present? What differences does he identify? How important are those differences? What do his concerns suggest about the relationship between science and politics? About the relationship between science and economics?

1. Barbara Katz Rothman, *The Book of Life: A Personal and Ethical Guide to Race, Normality, and the Implications of the Human Genome Project*. Beacon Press, 1998, 2001, pp. xiv-xv.

2. “Human Genetics in Nazi Germany” by Benno Müller-Hill in *Medicine, Ethics, and the Third Reich* edited by John J. Michalczyk. Sheed & Ward, 1994, p. 34.

Is Race “Skin Deep”?

Reading 3

Eugenicists divided the world into “races” and insisted that some “races” (their own in particular) were superior to others. In the early 1900s, the American Museum of Natural History in New York City organized its exhibitions around eugenic principles. In 2001, the museum opened a new exhibit entitled “The Genomic Revolution.” In a prominent place, the organizers featured the following statement:

The Only Race Is Human Race

No Biological Basis for Race

New data from the mapping of the human genome reveal that all humans are incredibly similar—in fact, we are 99.9% genetically identical. We are all members of one species, *Homo sapiens*. Scientists have confirmed, as they long suspected, that there is no genetic or biological basis for race.

Genetic variation between people within the same “racial” group can be greater than the variation between people of two different groups. Many people of African descent are no more similar to other Africans than they are to Caucasians. Genetic distinctions between Asians and Caucasians are less pronounced than those between groups from, for example, parts of East and West Africa.

No matter how scientists today scrutinize a person’s genes, they can’t determine with certainty whether an individual is from one “racial” group or another. Differences of culture and society distinguish one group from another, but these distinctions are not rooted in biology.

“Mapping the DNA sequence variation in the human genome holds the potential for promoting the fundamental unity of all humankind.” —Dr. Harold P. Freeman¹

A number of museums and scholarly associations have issued similar statements. Yet, writes physiologist Jared Diamond, most people regard the existence of race as obvious, a matter of common sense. He explains:

Our eyes tell us that the Earth is flat, that the sun revolves around the Earth, and that we humans are not animals. But we now ignore that evidence of our senses. We have learned that our planet is in fact round and revolves around the sun, and that humans are slightly modified chimpanzees. The reality of human races is another

commonsense “truth” destined to follow the flat Earth into oblivion.

The commonsense view of races goes somewhat as follows. All native Swedes differ from all native Nigerians in appearance: there is no Swede whom you would mistake for a Nigerian, and vice versa. Swedes have lighter skin than Nigerians do. They also generally have blond or light brown hair, while Nigerians have very dark hair. Nigerians usually have more tightly coiled hair than Swedes do, dark eyes as opposed to eyes that are blue or gray, and fuller lips and broader noses.

In addition, other Europeans look much more like Swedes than like Nigerians, while other peoples of sub-Saharan Africa—except perhaps the Khoisan peoples of southern Africa—look much more like Nigerians than like Swedes. . . .

What could be more objective?

As it turns out, this seemingly unassailable reasoning is not objective. There are many different, equally valid procedures for defining races, and those different procedures yield very different classifications. . . .

To understand how . . . uncertainties in classification arise, let’s steer clear of humans for a moment and instead focus on [animals], about which we can easily remain dispassionate. Biologists begin by classifying living creatures into species. A species is a group of populations whose individual members would, if given the opportunity, interbreed with individuals of other populations of that group. But they would not interbreed with individuals of other species that are similarly defined. Thus all human populations, no matter how different they look, belong to the same species because they do interbreed and have interbred whenever they have encountered each other. Gorillas and humans, however, belong to two different species because—to the best of our knowledge—they have never interbred, despite their coexisting in close proximity for millions of years. . . .

How does that variability of traits by which we classify races come about in the first place?

Many geographically variable human traits evolved by natural selection to adapt humans to particular climates or environments. . . . Good examples are the mutations that people in tropical parts of the Old World evolved to help them survive malaria, the leading infectious disease of the Old-World tropics. One such mutation is the sickle-cell gene, so-called because the red blood cells of people with that mutation tend to assume a sickle shape. People bearing the gene are more resistant to malaria than people without it. Not surprisingly,

the gene is absent from northern Europe, where malaria is nonexistent, but it's common in tropical Africa, where malaria is widespread. Up to 40 percent of Africans in such areas carry the sickle-cell gene. It's also common in the malaria-ridden Arabian Peninsula and southern India, and rare or absent in the southernmost parts of South Africa, among the Xhosas, who live mostly beyond the tropical geographic range of malaria.

The geographic range of human malaria is much wider than the range of the sickle-cell gene. As it happens, other antimalarial genes take over the protective function of the sickle-cell gene in malarial Southeast Asia and New Guinea and in Italy, Greece, and other warm parts of the Mediterranean basin. Thus human races, if defined by antimalarial genes, would be very different from human races as traditionally defined by traits such as skin color. As classified by antimalarial genes (or their absence), Swedes are grouped with Xhosas but not with Italians or Greeks. Most other peoples usually viewed as African blacks are grouped with Arabia's "whites" and are kept separate from the "black" Xhosas.

Antimalarial genes exemplify the many features of our body chemistry that vary geographically under the influence of natural selection. Another such feature is the enzyme lactase, which enables us to digest the milk sugar lactose. . . . Until about 6,000 years ago most humans, like all other mammal species, lost the lactase enzyme on reaching the age of weaning. The obvious reason is that it was unnecessary—no human or other mammal drank milk as an adult. Beginning around 4000 B.C., however, fresh milk obtained from domestic mammals became a major food for adults of a few human populations. Natural selection caused individuals in these populations to retain lactase into adulthood. Among such peoples are northern and central Europeans, Arabians, north Indians, and several milk-drinking black African peoples, such as the Fulani of West Africa. Adult lactase is much less common in southern European populations and in most other African black populations, as well as in all populations of East Asians, aboriginal Australians, and American Indians. . . .

Other visible traits that vary geographically among humans evolved by means of sexual selection. We all know that we find some individuals of the opposite sex more attractive than other individuals. We also know that in sizing up sex appeal, we pay more attention to certain parts of a prospective sex partner's body than to other parts. Men tend to be inordinately interested in women's breasts and much less concerned with women's toenails. Women, in turn, tend to be

turned on by the shape of a man's buttocks or the details of a man's beard and body hair, if any, but not by the size of his feet. . . .

There is a third possible explanation for the function of geographically variable human traits, besides survival or sexual selection—namely, no function at all. A good example is provided by fingerprints, whose complex pattern of arches, loops, and whorls is determined genetically. Fingerprints also vary geographically: for example, Europeans' fingerprints tend to have many loops, while aboriginal Australians' fingerprints tend to have many whorls.

If we classify human populations by their fingerprints, most Europeans and black Africans would sort out together in one race, Jews and some Indonesians in another, and aboriginal Australians in still another. But those geographic variations in fingerprint patterns possess no known function whatsoever. They play no role in survival. . . . They also play no role in sexual selection. . . .

You've probably been wondering when I was going to get back to skin color, eye color, and hair color and form. After all, those are the traits by which all of us members of the lay public, as well as traditional anthropologists, classify races. Does geographic variation in those traits function in survival, in sexual selection, or in nothing?

The usual view is that skin color varies geographically to enhance survival. Supposedly, people in sunny, tropical climates around the world have genetically dark skin, which is supposedly analogous to the temporary skin darkening of European whites in the summer. The supposed function of dark skin in sunny climates is for protection against skin cancer. . . .

Alas, the evidence for natural selection of skin color dissolves under scrutiny. Among tropical peoples, anthropologists love to stress the dark skins of African blacks, people of the southern Indian peninsula, and New Guineans and love to forget the pale skins of Amazonian Indians and Southeast Asians living at the same latitudes. To wriggle out of those paradoxes, anthropologists then plead the excuse that Amazonian Indians and Southeast Asians may not have been living in their present locations long enough to evolve dark skins. However, the ancestors of fair-skinned Swedes arrived even more recently in Scandinavia, and aboriginal Tasmanians were black-skinned despite their ancestors' having lived for at least the last 10,000 years at the latitude of Vladivostok.

Besides, when one takes into account cloud cover, peoples of equatorial West Africa and the New Guinea mountains actually receive no more ultraviolet radiation or hours of sunshine each year

than do the Swiss. Compared with infectious diseases and other selective agents, skin cancer has been utterly trivial as a cause of death in human history, even for modern white settlers in the tropics. . . .

It wouldn't surprise me if dark skins do eventually prove to offer some advantage in tropical climates, but I expect the advantage to turn out to be a slight one that is easily overridden. But there's an overwhelming importance to skin, eye, and hair color that is obvious to all of us—sexual selection. . . .

We all know how those highly visible “beauty traits” guide our choice of sex partners. Even the briefest personal ad in a newspaper mentions the advertiser's skin color, and the color of skin that he or she seeks in a partner. Skin color, of course, is also of overwhelming importance in our social prejudices. If you're a black African American trying to raise your children in white U.S. society, rickets and overheating are the least of the problems that might be solved by your skin color. ²

In reflecting on his argument, Diamond notes, “Depending on whether we classified ourselves by antimalarial genes, lactase, fingerprints, or skin color, we could place Swedes in the same race as either Xhosas, Fulani, the Ainu of Japan, or Italians.” He goes on to explain that the classifications we traditionally use are related to sexual selection. He finds that choice not surprising:

These traits are not only visible at a distance but also highly variable; that's why they became the ones used throughout recorded history to make quick judgments about people. Racial classification didn't come from science but from the body's signals for differentiating attractive from unattractive sex partners, and for differentiating friend from foe.

Such snap judgments didn't threaten our existence back when people were armed only with spears and surrounded by others who looked mostly like themselves. In the modern world, though, we are armed with guns and plutonium, and we live our lives surrounded by people who are much more varied in appearance. The last thing we need now is to continue codifying all those different appearances into an arbitrary system of racial classification.³

When her family spent six months in the Netherlands, Barbara Katz Rothman discovered how arbitrary racial classifications are. Fearful that her then five-year-old daughter Victoria would be the only “black kid in her class,” Rothman was told her concerns were unfounded. Yet, Rothman writes:

She was the only black kid in her class. She was the only black kid I saw anywhere in that school. If I hadn't been reassured by people I genuinely like and trust, I'd have just been angry. As it was, I was puzzled. I walked over to a wall of photographs of the school going back for years and years, group after group of class photos. No black kids. I didn't say anything, just kept watching, thinking about it. A few days later, light dawned for me: there were dark-skinned kids from India and Pakistan in all the classes. Black kids. European-style black kids.

For an American, with an American sensibility of race, Indian and African kids are not both "black." For a Dutch person, with a different race system in his head, these were all black kids.

So what does that story prove, anyway? That the Dutch draw a different line? Maybe between the Dutch and everyone else? Not being Dutch, are all the blacks, well, black? The Indian kids in her class could see what my kid and I could see, the distinctiveness of African features over and above the similarity of skin color.

So does the story tell us that race is a socially constructed category, constructed differently in different places? Or does it tell us that the Dutch draw their lines so tightly around themselves that they don't bother to make finer discriminations—not that they don't see or experience the distinction as existing, but that they don't see why it should matter.

And is that what white Americans do when they see a black kid whose family has been in the United States since slavery days, a black kid whose family arrived two generations ago from Haiti, and a black kid who just immigrated here from Nigeria, and calls them all "African American," seeing no meaningful differences?⁴

Rothman explains:

People certainly do see race. We see race as this physical reality, this recognizable pattern of differences between people. It is foolish to try to persuade people that the differences don't exist. They do. It is pointless to try to convince people that the differences don't matter. They do.

What confuses us is that the differences exist physically, but matter socially. There are physical differences, and even physical consequences. But there is not a physical cause-and-effect relationship between them. Take something relatively simple: There is a much higher infant mortality rate among blacks than among whites in America. The differences between black and white women are there,

real and measurable. But those differences, the physical, biological characteristics marked as race—level of melanin in the skin, shape of the nose, or whatever—are not the cause of the different infant mortality rates. The darkness of the mother is a physical, biological phenomenon, as is the death of the baby. But the relationship between the two is a social reality; it is the social consequence of race that causes the physical reality of death.⁵

CONNECTIONS

The organizers of the exhibition at the American Museum of Natural History placed a number of sentences and phrases in their statement on race in large and/or very dark type. Why do you think they chose to highlight those ideas? If you were to highlight Jared Diamond's essay in a similar way, which sentences or phrases would you emphasize? Compare your choices with those of your classmates. How do you account for similarities and differences?

To what extent is seeing believing? How does Jared Diamond challenge that idea? To what extent does Rothman's story challenge it? How does our culture shape what we see and what we fail to notice? How does culture affect the importance we place on the differences we see in the world?

Law professor Martha Minow writes, "When we identify one thing as unlike the others, we are dividing the world; we use our language to exclude, to distinguish—to discriminate." How do her comments apply to popular ideas about race? To the use of "racial categories" in everyday life? How do those categories affect the way we see ourselves? The way others view us?

One goal of education is to expose individuals to other ideas so that they can weigh alternatives and make wise decisions. What role can education play in ending the "social reality" of race? In small groups, brainstorm ideas for altering or abolishing harmful stereotypes. Report to the class on the idea or combination of ideas your group considers most effective in ending discrimination.

Find out how institutions in your community address the "social reality of race." What successes have you uncovered? What problems remain?

1. www.amnh.org/exhibitions/genomics/1_identity/ninety_nine.html

2. "Race without Color" by Jared Diamond. *Discover*, November, 1994, p. 82-89.

3. *Ibid.*, p. 89.

4. Barbara Katz Rothman, *The Book of Life: A Personal and Ethical Guide to Race, Normality, and the Implications of the Human Genome Project*. Beacon Press, 1998, 2001, pp. 51-52.

5. *Ibid.*, p. 63.

The Power of Stereotypes

Reading 4

In the early 1900s, race was the lens through which many Americans viewed the world. It was a lens that shaped people's ideas about who belongs and who does not. During those years, a few people resisted the laws and customs that supported the notions that regarded African Americans as "inferior." Little by little, they chipped away at segregation. Then, on May 17, 1954, in *Brown v. the Board of Education*, the United States Supreme Court ruled unanimously that separate public schools for black and white children were not and could never be equal. In communities across the nation, educators made plans to integrate their schools.

In the fall of 1957, officials in Little Rock, Arkansas, decided to integrate the schools gradually beginning with Central High School. That September, the arrival of nine African American students resulted in a year of protests and violence followed by the closing of every high school in the city for one year.

Forty years later, the once all-white student body at Central High was 58 percent black and 39 percent white. Much as it was forty years earlier, the school was still known for producing many of the state's brightest students. Those students were both black and white and many of them were later admitted to the nation's most prestigious universities. Yet at Central High School, the honors classes were predominately white and the regular classes primarily African American. No one seems sure why this was so. Some think it was a result of racism. Others attributed it to the poor academic preparation of incoming black students. There was a similar gap between the scores of black and white students on the SATs and other tests that measure intelligence. That gap, which exists in many communities, has troubled many scholars including Claude D. Steele, the Lucie Stern Professor in the Social Sciences at Stanford University. He writes:

Over the past four decades African-American college students have been more in the spotlight than any other American students. . . . These students have borne much of the burden for our national experiment in racial integration. And to a significant degree the success of the experiment will be determined by their success.

Nonetheless, throughout the 1990s the national college-dropout rate for African Americans has been 20 to 25 percent higher than that for whites. Among those who finish college, the grade-point average of black students is two thirds of a grade below that of whites.

A recent study by William Bowen and Derek Bok, reported in their book *The Shape of the River*, brings some happy news: despite

this underachievement in college, black students who attend the most selective schools in the country go on to do just as well in postgraduate programs and professional attainment as other students from those schools. . . . Still, the underperformance of black undergraduates is an unsettling problem, one that may alter or hamper career development, especially among blacks not attending the most selective schools.

Attempts to explain the problem can sound like a debate about whether America is a good society, at least by the standard of racial fairness, and maybe even about whether racial integration is possible. It is an uncomfortably finger-pointing debate. Does the problem stem from something about black students themselves, such as poor motivation, a distracting peer culture, lack of family values, or . . . genes? Or does it stem from the conditions of blacks' lives: social and economic deprivation, a society that views blacks through the lens of diminishing stereotypes and low expectations, too much coddling, or too much neglect?

In recent years this debate has acquired a finer focus: the fate of middle-class black students. Americans have come to view the disadvantages associated with being black as disadvantages primarily of social and economic resources and opportunity. This assumption is often taken to imply that if you are black and come from a socio-economically middle-class home, you no longer suffer a significant disadvantage of race. . . .

But virtually all aspects of underperformance—lower standardized-test scores, lower college grades, lower graduation rates—persist among students from the African-American middle class. This situation forces on us an uncomfortable recognition: that beyond class, something racial is depressing the academic performance of these students.¹

As Steele and his colleagues investigated the gap, they wondered if the underperformance of African American students was affected by what they called “stereotype threat”—“the threat of being viewed through the lens of a negative stereotype, or the fear of doing something that would inadvertently confirm that stereotype.” Steele, an African American, believes a black student is more likely than other Americans to wonder whether his or her “race” will set boundaries to experiences and relationships. Steele explains:

With time he may weary of the extra vigilance these situations require. . . . To reduce this stress he may learn to care less about the situations and activities that bring it about—to realign his self-regard

so that it no longer depends on how he does in the situation. We have called this psychic adjustment “disidentification.” Pain is lessened by ceasing to identify with the part of life in which the pain occurs. This withdrawal of psychic investment may be supported by other members of the stereotype-threatened group—even to the point of its becoming a group norm. But not caring can mean not being motivated. And this can have real costs. When stereotype threat affects school life, disidentification is a high price to pay for psychic comfort. Still, it is a price that groups contending with powerful negative stereotypes about their abilities—women in advanced math, African-Americans in all academic areas—may too often pay.

Steele and his colleagues designed a series of experiments to test their ideas. As part of the first set of experiments, they statistically matched in ability level two groups of Stanford students, one black and one white. The students, one at a time, were asked to take a thirty-minute test made up of items from the advanced Graduate Record Examination in literature. Because the students were mainly sophomores, they all found the test difficult. The test was presented to students in two ways: as a test of ability or a laboratory task to find out how certain problems are solved. The results seemed to confirm Steele’s hypothesis: “When the difficult verbal test was presented as a test of ability, black students performed dramatically less well than white students, even though we had statistically matched the two groups in ability level. Something other than ability was involved; we believed it was stereotype threat.”

Steele writes of his experiment:

In matters of race we often assume that when a situation is objectively the same for different groups, it is experienced in the same way by each group. This assumption might seem especially reasonable in the case of “standardized” cognitive tests. But for black students, difficulty with the test makes the negative stereotype relevant as an interpretation of their performance, and of them. They know that they are especially likely to be seen as having limited ability. Groups not stereotyped in this way don’t experience this extra intimidation. And it is a serious intimidation, implying as it does that they may not belong in walks of life where the tested abilities are important—walks of life in which they are heavily invested. Like many pressures, it may not be experienced in a fully conscious way, but it may impair their best thinking.

Steele wondered if “the effects of stereotype threat come entirely from the fear

of being stereotyped” or “from something internal to black students—self-doubt, for example.” This time, he and his colleagues tested “white male students who were strong in math.” Half were told that a difficult math test they were about to take was one on which “Asians generally did better than whites.” The other half was simply told that the test was difficult. Steele reasoned that “if stereotype threat alone—in the absence of any internalized self-doubt—was capable of disrupting test performance, then white males taking the test after this comment should perform less well than white males taking the test without hearing the comment.” That is just what happened. The results of related tests to measure the effects of gender and class stereotypes seemed to confirm Steele’s findings.

Steele and his colleagues also discovered that “the most achievement-oriented students, who were also the most skilled, motivated, and confident, were the most impaired by stereotype threat.” Steele explains why:

A person has to care about a domain in order to be disturbed by the prospect of being stereotyped in it. . . . When we tested participants who identified less with these domains, what had been under our noses hit us in the face. None of them showed any effect of stereotype threat whatsoever.

These weakly identified students did not perform well on the test: once they discovered its difficulty, they stopped trying very hard and got a low score. But their performance did not differ depending on whether they felt they were at risk of being judged stereotypically.

What can be done to overcome the “stereotype threat”? Steele believes that “the success of black students may depend less on expectations and motivation—things that are thought to drive academic performance—than on trust that stereotypes about their group will not have a limiting effect in their school world.” To test this idea, Steele and his colleagues decided to find out whether boosting a student’s self confidence before a test affected his or her score. It did not. He explains:

What did raise the level of black students’ performance to that of equally qualified whites was reducing stereotype threat—in this case by explicitly presenting the test as racially fair. When this was done, blacks performed at the same high level as whites even if their self-confidence had been weakened by a prior failure.

These results suggest something that I think has not been made clear elsewhere: when strong black students sit down to take a difficult standardized test, the extra apprehension they feel in comparison with whites is less about their own ability than it is about having to perform on a test and in a situation that may be primed to treat them

stereotypically. We discovered the extent of this apprehension when we tried to develop procedures that would make our black participants see the test as “race-fair.” It wasn’t easy. African Americans have endured so much bad press about test scores for so long that, in our experience, they are instinctively wary about the tests’ fairness. We were able to convince them that our test was race-fair only when we implied that the research generating the test had been done by blacks. When they felt trust, they performed well regardless of whether we had weakened their self-confidence beforehand. And when they didn’t feel trust, no amount of bolstering of self-confidence helped.

In reflecting on how a school or a teacher can foster trust across the “racial divide,” Steele and his colleagues set up yet another experiment. They invited black and white Stanford students to write essays about favorite teachers for possible publication in a journal. Before each student left the first writing session, a researcher took a Polaroid snapshot of the student and placed it on top of his or her essay for use “if the essay was published.” The purpose was to let essay writers know that the person evaluating their writing was aware of their race. Steele describes what happened when the writers received feedback on their work:

We found that neither straight feedback nor feedback preceded by the “niceness” of a cushioning statement (“There were many good things about your essay”) was trusted by black students. They saw these criticisms as probably biased, and they were less motivated than white students to improve their essays. White students took the criticism at face value—even as an indication of interest in them. Black students, however, faced a different meaning: the “ambiguating” possibility that the criticism was motivated by negative stereotypes about their group as much as by the work itself. Herein lies the power of race to make one’s world insecure—quite apart from whatever actual discrimination one may experience.

But this experiment also revealed a way to be critical across the racial divide: tell the students that you are using high standards (this signals that the criticism reflects standards rather than race), and that your reading of their essays leads you to believe that they can meet those standards (this signals that you do not view them stereotypically). This shouldn’t be faked. High standards, at least in a relative sense, should be an inherent part of teaching, and critical feedback should be given in the belief that the recipient can reach those standards. These things go without saying for many students. But they have to be

made explicit for students under stereotype threat. The good news of this study is that when they are made explicit, the students trust and respond to criticism. Black students who got this kind of feedback saw it as unbiased and were motivated to take their essays home and work on them even though this was not a class for credit. They were more motivated than any other group of students in the study—as if this combination of high standards and assurance was like water on parched land, a much needed but seldom received balm. . . .

My colleagues and I believed that our laboratory experiments had brought to light an overlooked cause of poor college performance among non-Asian minorities: the threat to social trust brought about by the stereotypes of the larger society. But to know the real-life importance of this threat would require testing . . . in the buzz of everyday life.

To this end [we] undertook a program aimed at incoming first-year students at the University of Michigan. Like virtually all other institutions of higher learning, Michigan had evidence of black students' underachievement. Our mission was clear: to see if we could improve their achievement by focusing on their transition into college life. We also wanted to see how little we could get away with—that is, to develop a program that would succeed broadly without special efforts. The program (which started in 1991 and is ongoing) created a racially integrated “living and learning” community in a 250-student wing of a large dormitory. It focused students on academic work (through weekly “challenge” workshops), provided an outlet for discussing the personal side of college life (through weekly rap sessions), and affirmed the students' abilities (through, for example, reminding them that their admission was a vote of confidence). The program lasted just one semester, although most students remained in the dormitory wing for the rest of their first year.

Still, it worked: it gave black students a significant academic jump start. Those in the program (about 15 percent of the entering class) got better first-year grades than black students outside the program, even after controlling for differences between these groups in the skills with which they entered college. Equally important, the program greatly reduced underperformance: black students in the program got first-year grades almost as high as those of white students in the general Michigan population who entered with comparable test scores. This result signaled the achievement of an academic climate nearly as favorable to black students as to white students. And it was achieved through a concert of simple things that enabled black

students to feel racially secure.

One tactic that worked surprisingly well was the weekly rap sessions—black and white students talking to one another in an informal dormitory setting, over pizza, about the personal side of their new lives in college. Participation in these sessions reduced students' feelings of stereotype threat and improved grades. Why? Perhaps when members of one racial group hear members of another racial group express the same concerns they have, the concerns seem less racial. Students may also learn that racial and gender stereotypes are either less at play than they might have feared or don't reflect the worst-feared prejudicial intent. Talking at a personal level across group lines can thus build trust in the larger campus community. The racial segregation besetting most college campuses can block this experience, allowing mistrust to build where cross-group communication would discourage it.

Our research bears a practical message: even though the stereotypes held by the larger society may be difficult to change, it is possible to create niches in which negative stereotypes are not felt to apply. In specific classrooms, within specific programs, even in the climate of entire schools, it is possible to weaken a group's sense of being threatened by negative stereotypes, to allow its members a trust that would otherwise be difficult to sustain. Thus when schools try to decide how important black-white test-score gaps are in determining the fate of black students on their campuses, they should keep something in mind: for the greatest portion of black students—those with strong academic identities—the degree of racial trust they feel in their campus life, rather than a few ticks on a standardized test, may be the key to their success.

CONNECTIONS

In the 1920s, journalist Walter Lippmann coined the word *stereotype*, which he defined as a “picture in the mind.” What does this reading suggest about the power of those “pictures in the mind”? Claude Steele writes, “In matters of race we often assume that when a situation is objectively the same for different groups, it is experienced in the same way for each group. This assumption may seem especially reasonable in the case of standardized cognitive tests.” How does he challenge that assumption?

How do Steele and his colleagues use facts—particularly statistics—to define the gap between the performance of black and white students on standardized tests?

To brainstorm ideas for determining the causes? How do they test their ideas? How do they use the results to suggest remedies? Compare and contrast their methods with those of eugenicists and progressive reformers?

Commenting on the results of the intelligence test he devised, Lewis Terman, also a professor at Stanford University in the early 1900s, wrote: “The tests have told the truth.” (See page 156.) How do you account for differences between his reading of the results of IQ tests and those of Steele and his colleagues?

Steele focuses on the “underachievement” of African American students who have the necessary skills and knowledge to do college work. How might his research be applied to other groups that “underachieve” in similar ways—for example, female students in science and math courses? To what extent does the notion of a “stereotype threat” apply to the way you and your classmates approach important standardized tests? Design an experiment to find out if your assumptions are correct.

Research the way at least one other social scientist views the achievement gap across the “racial divide.” What questions do the studies you investigated raise? How has the scientist tried to address those questions? After you and your classmates have shared your findings, list the various solutions individuals and groups have proposed. Which do you think would do the most to bridge the gap?

1. This and the quotations that follow are taken from “Thin Ice: ‘Stereotype Threat’ and Black College Students” by Claude M. Steele. *The Atlantic Monthly*, August, 1999. Vol. 284, No. 2, pages 44-54. Copyright © 1999 by The Atlantic Monthly Company. All rights reserved.

Measuring Intelligences

Reading 5

Eugenicists believed that intelligence was fixed at birth and could be identified by an IQ test that measured verbal and mathematical abilities. Today few scientists still believe that intelligence is static. There is too much evidence showing that scores on an IQ test can be raised or lowered by changing a test-taker's environment. Psychologists, educators, and other researchers today also regard intelligence as far more complicated than language and mathematical skills. Howard Gardner, a psychologist who has done pioneering work on intellectual capacities, has identified the following intelligences:

Verbal-linguistic (People with this kind of intelligence enjoy writing, reading, telling stories or doing crossword puzzles.)

Logical-mathematical (Those with this kind of intelligence are interested in patterns, categories and relationships. They are drawn to strategy games and experiments.)

Bodily-kinesthetic (People with this kind of intelligence express themselves through drama, mime, dance, gesture, facial expressions, role play, and physical exercise.)

Visual-spatial (Individuals with this kind of intelligence think in images and pictures. They may be fascinated with mazes or jigsaw puzzles.)

Musical (Those who are musical are often aware of sounds others may miss. They tend to be discriminating listeners.)

Interpersonal (Individuals with this kind of intelligence are good at communicating and seem to understand others' feelings and motives.)

Intrapersonal (People with this kind intelligence are very aware of their own feelings and are often self-motivated.)

Naturalist (Individuals who are able to recognize flora and fauna, to make other consequential distinctions in the natural world, and to use this ability productively in hunting, in farming, or in the biological sciences.)

In 1999, Stefanie Weiss of the National Education Association (NEA) interviewed Gardner about his theories for the group's journal *NEA Today*. Her questions appear in italic type.

Can you give a shorthand version of your theory of multiple intelligences?

Multiple intelligences is a psychological theory about the mind.

It's a critique of the notion that there's a single intelligence which we're born with, which can't be changed, and which psychologists can measure. It's based on a lot of scientific research in fields ranging from psychology to anthropology to biology. It's not based upon test correlations, which most other intelligence theories are based on.

The claim is that there are at least eight different human intelligences. Most intelligence tests look at language or logic or both—those are just two of the intelligences. The other six are musical, spatial, bodily/kinesthetic, interpersonal, intrapersonal, and naturalist.

I make two claims. The first claim is that all human beings have all of these intelligences. It's part of our species definition. The second claim is that, both because of our genetics and our environment, no two people have exactly the same profile of intelligences, not even identical twins, because their experiences are different.

This is where we shift from science to education. If we all have different kinds of minds, we have a choice. We can either ignore those differences and teach everybody the same stuff in the same way and assess everybody in the same way. Or we can say, look, people learn in different kinds of ways, and they have different intellectual strengths and weaknesses. Let's take that into account in how we teach and how we assess.

So how should teachers who believe in your theory change their approach to teaching?

. . . In my own work, I'm a proponent of teaching for understanding, which means going deeply into topics so that students can really make use of knowledge in new situations. This is very, very different from most teaching, where people memorize material and can reproduce it on demand but can't make use of it in new situations. That's what understanding entails. If you favor education for understanding the way I do, then MI [multiple intelligences] can be extremely helpful. Because when you are teaching a topic, you can approach the topic in many ways, thereby activating different intelligences. You can provide analogies and metaphors for different domains, invading different intelligences, and finally, you can present the key ideas in a number of different languages or symbol systems, again activating different intelligences.

But obviously you can't do that if you're going to spend five minutes on a topic and then move on to something. Then you're almost constrained to present it one way, which is usually verbally, and to give people a short-answer test. . . .

Can standardized tests ever hope to measure children's full intelligence?

I'm not in favor of tests that are designed to measure people's intelligence, because frankly I don't care what intelligence or intelligences people have. I care whether they can do things which we value in our culture. What good is it to know if you have an IQ of 90 or 110—or even if you can jack it up to 120 through a lot of training—if, in the end, you can't do anything.

I think our assessments ought to focus on the kinds of things we want people to understand, and they ought to give people a chance to perform their understandings. Because, at the end of the day, it doesn't matter if you have an IQ of 160 if you sit around and do nothing. What's important is whatever IQ you have or whatever profile of intelligences you have, that you can demonstrate knowledge and understanding of things that matter.

So do you think the high-stakes testing movement that we're seeing now is going to force people to abandon different approaches to teaching?

Yes. Current approaches almost inevitably push people to teach to the test, because those tests are so high-stake both for students and for teachers. Now, in principle, one could have assessments which probe understanding, and they could even be standardized. I would be much more in favor of those assessments. But those assessments would have to give people lots of choices. Because, say you're doing American history, you have to say to people, "I want you to discuss, let's say, the role of immigration in America, but you can discuss it with reference to any one of 20 different groups or 20 different issues." If, on the other hand, you require people to know all 20 different groups and all 20 issues, then obviously, they can't know very much about any one of them. It's just a very superficial, Jeopardy-style knowledge.

Now let's be clear about this: Assessment is fine. Even standardized assessment is fine, if it looks at things which are important and allows us to probe in-depth what people understand. . . .

How do you respond to those who say that MI theory is appealing, but there's no proof to back it up?

There's no short answer to that question. To begin with, it's a scientific theory, and so it needs to be evaluated on the basis of the science on which it draws. And I think it does quite well in terms of

the scientific evidence, even the evidence that's accumulated since the theory was first propounded 20 years ago.¹

CONNECTIONS

Howard Gardner makes two claims. The first is that all human beings have all of the intelligences he cites and that because of our genetics and our environment, no two people have “exactly the same profile of intelligences, not even identical twins, because their experiences are different.” How is his view of intelligence similar to the one held by eugenicists (Chapter 5)? How does it differ? How important are the differences?

What questions does Gardner's research raise about intelligence testing? About the meaning of the word *intelligence*? Find out more about his list of multiple intelligences. To what extent do you have all eight of them? Which one best describes your style of learning?

What does Gardner mean when he says he sees multiple intelligences as a tool rather than a goal? How important is that difference to the way schools are organized? To the way teachers teach? To the way students approach their own learning?

Gardner says of intelligence tests, “At the end of the day, it doesn't matter if you have an IQ of 160 if you sit around and do nothing. What's important is whatever IQ you have or whatever profile of intelligences you have, that you can demonstrate knowledge and understanding of things that matter.” Based on your study of the history of racism and the eugenics movement, what evidence can you find to support Gardner's view? To challenge that view? What do your own experiences with IQ tests add to his insights?

Gardner does not discuss the consequences of intelligence tests based solely on verbal and mathematical abilities. Find out more about those tests and how they have shaped schools in the past and the way they still affect schooling today. Share your findings with your classmates. To what extent do schools in your community still reflect the kind of categorizing and ranking that marked education in the 1900s? What do your findings suggest about the legacies of the eugenics movement?

In February of 2001, Richard C. Atkinson, the president of the University of California and founding chairman of the National Research Council's board on

testing and assessment, recommended to the university's academic senate that the 10-campus system no longer require the SAT 1 for admission. Instead the university would require only standardized tests, such as SAT 2, that assess mastery of specific subjects. In April, a number of corporate leaders sent a letter to more than 70 college and university presidents urging that they place less emphasis on such tests as the SAT and ACT in admissions decisions. They argued that in their own experience character, leadership qualities, and effective communication skills matter more than test scores in determining an employee's potential. They would like colleges to apply similar criteria in their admissions procedures.

Suppose you were asked to recommend an alternative to the SAT for college admissions. What would you ask students to provide that might give college officials a better picture of their abilities? Be sure to include reasons and evidence to support your recommendations and then present them to the class.

1. "Meet Howard Gardner: All Kinds of Smarts," complete interview by Stefanie Weiss. *NEA Today Online*. <http://www.nea.org/neaoday/9903/gardner.html>

Trends in Genetic Research

Reading 6

Many of the new scientific advances are raising tough questions for scientists, lawmakers, religious leaders, and ordinary citizens. This reading and the two that follow offer insights into current debates. In this reading, Jeff Lyon, a Pulitzer Prize-winning science writer for the *Chicago Tribune*, summarizes recent advances:

Until recently, human cloning wasn't something most adults expected to see in their lifetimes. Even five years ago, many scientists believed it would be another 20 years or more before they figured out how to clone any species of mammal—that is, how to get a single cell from an adult animal to generate a whole new animal. But that assumption was demolished in February 1997, when British embryologist Ian Wilmut, Ph.D., announced that he and colleagues at the Roslin Institute in Edinburgh, Scotland, had successfully cloned a sheep: the now world-famous Dolly.

Since then the floodgates have opened, and cattle, goats, mice, and pigs have all been cloned. Dogs haven't been cloned yet, but researchers at Texas A& M University are working on it. And now it seems it may not be long before the ultimate line is crossed.

[In January 2001] Panos Zavos, Ph.D., then professor of reproductive physiology at the University of Kentucky, announced that he was leaving his position to team up with Severino Antinori, M.D., an Italian fertility specialist, to try to clone a human by 2003. Their purpose, he said, is to help infertile couples who want a genetically related child. . . .

Welcome to the future, where science fiction becomes science fact and researchers and ordinary citizens alike must wrestle with a question that has profound meaning for humankind: Should scientists be allowed to pursue research that may one day enable them to shape and even create life? Or to put it another way: Is it right for scientists to assume powers that many people believe should belong only to God?

Less than a decade ago, this question would have prompted an automatic answer from most people: No, it shouldn't be allowed—not that is likely to happen any time soon. But in a swift and startling turn-about, the answer to that question has become less clear, even as scientists are taking baby steps toward making such things happen. . . .

Yet, even as the likelihood of human cloning becomes more real, the science is still rudimentary. Most cloned animals die in the womb, and even those that initially seem healthy often develop fatal defects of the heart, lungs, kidney, brain, and immune system down the road. Something about cloning seems to disrupt normal gene activation in the developing fetus. This could prove catastrophic if an attempt is made to clone a human. Dr. Wilmut has said that trying it now would be "criminally irresponsible."

Nor is cloning the only sign that humans are assuming powers once relegated to the Almighty. [In September 2000] six-year-old Molly Nash of Englewood, Colorado, was given a blood transfusion that doctors hoped would help cure her of Fanconi's anemia. This rare, often fatal, hereditary disease causes the bone marrow to fail to produce blood cells and platelets. The transfused blood came from her baby brother, Adam. It had been collected from his umbilical cord at the time of his birth. Adam had been conceived in a laboratory dish with other embryos produced by his parents' eggs and sperm. He had been implanted in his mother's womb because he was disease free and because his tissue and blood type matched his sister's—in other words, so he could be her donor. The other embryos were discarded. Cord blood is rich in stem cells, the mother cells found in various organisms that generate the functional cells of those organs. It was hoped that Adam's stem cells would generate functioning bone marrow and a healthy new blood supply for Molly.

The procedure seems to have worked. Tests done in January [2001] found that almost all of Molly's bone marrow came from Adam. "While we will continue to monitor Molly, especially over this first critical year, her prognosis looks great," said John Wager, M.D., a transplant specialist at the University of Minnesota Medical School, who performed the transfusion. The Nashes did not doubt they had done the right thing. "You could say it was an added benefit to have Adam be the right bone-marrow type, which would not hurt him in the least and would save Molly's life," Lisa, their mother, said in September. "We didn't have to think twice about it." But some ethicists were concerned. Would children now be bred for their biological usefulness?

Stem cells, meanwhile, are the focus of another scientific endeavor that rivals cloning in its potential to bestow Godlike powers on human beings. Researchers hope someday to be able to direct a person's stem cells to grow new organs and tissues for that person in a lab. The cells could be told to grow a liver for someone who needs

a transplant, for example, or brain cells for someone with Alzheimer's disease. And because the cells would contain the person's own DNA, there would be no problem with tissue rejection.

Advances in genetic engineering and gene therapy are also transforming the nature of life and the way we live. Researchers have already created genetically altered seeds and grains designed to produce hardier plants and bigger harvests—and American consumers are already eating some of this altered produce without knowing it. And despite a tragic setback in September 1999, when 18-year-old Jesse Gelsinger of Tucson, Arizona, died during a gene-therapy experiment at the University of Pennsylvania, research is also moving forward in developing safer, more effective ways to deliver healthy new genes into a patient's cells.

Thanks to the Human Genome Project, the ongoing effort to codify and learn the function of the . . . genes that make up the instruction manual for the human body, researchers are also zeroing in on which genes cause and can cure various diseases. In a few years it may be possible for people to go to a doctor's office, and in the time it takes to read this article, get a full lab report detailing their genetic predisposition to various diseases. If the report noted a susceptibility to lung cancer, for example, they would then be counseled not to smoke. In the not-too-distant future, scientists could also have the power to design smarter, more attractive, and athletic offspring by tinkering with a child's genetic makeup before or after birth. Such powers would enable them to change the course of human evolution, and do it in a matter of generations.

And then there is the ultimate quest: to create life itself. In 1953 researchers at the University of Chicago mixed methane, ammonia, hydrogen, and water—the ingredients of the so-called "primordial soup" that existed on the young earth—and passed an electric current through it to simulate lightning. To their amazement, they found traces of amino acids—the chemical building blocks of life—in the residue. Now a team of scientists headed by a brilliant maverick named J. Craig Venter, Ph.D., director of the Institute for Genomic Research in Rockville, Maryland, is conducting another experiment.

Working with a harmless species of bacteria called *Mycoplasma genitalium* that has only 517 genes—the fewest of any known organism—Dr. Venter and his colleagues disrupted the microbe's genes one by one to see which it needed to stay alive. The next task, they wrote, is to narrow down that number as a "first step" toward "engineering" a cell with "a minimum genome" in the lab: in

other words, manufacturing a living microbe.

That's as far as Dr. Venter has taken the research. The question is whether anyone should take it any further. In the issue of *Science* containing his paper, a panel of bioethicists—thinkers who specialize in weighing the thorny issues raised by modern medicine and biology—addressed this point at his request. They . . . gave it a conditional thumbs-up. The prospect of humans creating a life form “does not violate any fundamental moral precepts,” the authors wrote. But they did raise questions they felt needed to be considered, such as whether the new technology would “be used for the benefit of all” and the possibility that it could be misused to create new biological weapons.¹

CONNECTIONS

What evidence does Jeff Lyon offer of “science fiction” becoming “science fact”? What evidence can you add based on your study of the history of racism and the eugenics movement?

What do efforts to clone animals and ultimately human beings suggest about the power of ideas? About the way an idea that seems repulsive at first becomes more and more attractive? What aspects of the history of the eugenics movement may offer scientists, politicians, and ordinary citizens useful insights as they consider the possibilities of cloning?

Invite one or more guest speakers to the class to address the implications of genetic testing. You might ask a researcher in biotechnology, a physician, or someone knowledgeable about the implications of genetic testing for people with disabilities or inherited illnesses to address the class.

Find out more about genetic testing by researching one or more of the following diseases, disabilities, or conditions. Or you may prefer to study one of your own choosing.

Diseases:

Tay Sachs
Cystic Fibrosis
Muscular Dystrophy
Breast Cancer
Sickle Cell Anemia

Disabilities:

Blindness
Down Syndrome
Spina Bifida
Fragile X Syndrome

Conditions:

Dwarfism
Baldness
Cleft Palate

As you gather information, look for answers to the following questions:

- What is the genetic basis of the condition? (Single gene, polygenetic, etc.) To what degree does prenatal development, diet, and the environment influence its development?
- What do the existing technologies reveal about the condition? What remains to be learned?
- What are the critical questions for us as citizens? These questions may relate to individual choices or public policy.

Present your research to the class. What concerns emerge as you listen to other reports and compare them to your own? What are the implications of those concerns?

Collect recent articles on genetic research. Read at least five of the articles and list the claims and cautions the authors make about genes. Compare your findings with those of your classmates. How do you account for similarities among the articles? To what extent do they support concerns about “genetic determinism”? To what extent do they challenge that idea?

1. “Playing God: Has Science Gone too Far?” by Jeff Lyon. *Family Circle*, July 10, 2001, pp. 56, 58.

Will Genetic Research Lead to Eugenic Policies?

Reading 7

Arthur Caplan, a bioethicist, says of Craig Venter's efforts to manufacture a living microbe (Reading 6), "A couple of years ago I'd have opposed this experiment. I think society is becoming used to genetic tinkering." That is exactly what worries Laura Hershey, a Colorado consultant who served on the Denver Commission for People with Disabilities. She is among the disability-rights activists who are "becoming increasingly alarmed about the economic and political issues arising from the rapidly advancing field of genetic research." In 1999, she wrote in part:

The application of genetic knowledge to the repair of damaged genes, for the purpose of treating certain illnesses, may offer welcome benefits to some people with disabilities. But genetic research is likely to be put to other, more insidious, uses such as denying health insurance, even jobs, to people whose genes predispose them to medical problems. Another threat is the implementation of eugenic policies to "weed out" certain types of people from the population. Thus, along with the much-heralded scientific advances offered by genetic research, disability activists nervously witness a resurgence of eugenic thinking.

Genetic Screening Against Disability

Using ultrasound and abortion to select a child's sex is regarded as unacceptable to most people. Using genetic testing to eradicate characteristics such as homosexuality is still a new concept, but is likely to cause a great deal of controversy. Yet the media and the public seem to accept, almost without question, the idea of screening for genetic anomalies that cause disabilities and then using that information to eliminate certain conditions, by eliminating their carriers before birth.

Scientists and journalists may consider genetic screening against disability a wise public health strategy. But the progressive disability community sees the dangers inherent in targeting genetic research toward efforts to do away with disability. . . .

Many people assume that people with disabilities would want to spare future generations from the difficulties we had to endure. But this assumption relies on another assumption, that our disabilities are inherently problematic. The disability-rights movement disputes that

idea. Rather than blaming our physical or mental disabilities themselves, we see our problems as rooted in social, physical, economic and political barriers. Attempting systematically to wipe out disabilities is the wrong solution. Instead, society should commit itself to removal of these barriers, and to full equality for people with disabilities.

Still, why would disabled adults object to genetic practices which do not directly affect us? At first glance, genetic screening seems to target only potential people with disabilities—either fetuses diagnosed with genetic anomalies, or those not yet conceived, but at risk of such anomalies. But in fact, the mindset that advocates the widespread, even routine use of screening also promotes efforts to “prevent disability”—not by reducing occupational hazards and violence, nor by improving health care or environmental conditions; but by deterring the births of children who may have disabilities.

Genetic counseling, prenatal testing, and selective abortions arise from—and reinforce—the erroneous and dangerous belief that people with disabilities are a problem. As our society struggles with the allocation of health care resources, we overlook the vast amounts of money which are consumed by corporate bureaucracies and private profits. People with disabilities are scapegoated for needing and using expensive medical services and ongoing supports. . . .

As an example, witness the recent remarks of Dr. Bob Edwards, world-renowned embryologist and creator of Britain’s first test-tube baby. Speaking at an international fertility conference, Edwards said the increasing availability of prenatal screening for genetic disease gave parents a moral responsibility not to give birth to disabled children. Edwards celebrated a new age in which every child would be genetically acceptable. “Soon,” he pronounced, “it will be a sin of parents to have a child that carries the heavy burden of genetic disease. We are entering a world where we have to consider the quality of our children.” . . .

Not Model Citizens

Since virtually the beginning of the disability-rights movement, activists have critiqued “the medical model.” This model viewed people with disabilities—our bodies, our social identity, our private histories—as pathology. The medical model viewed people with disabilities as afflicted, ill, aberrant, burdened patients to be cured, or at least rehabilitated.

We refuted the mastery of the physician, and challenged the

built-world around us to change, to adapt to our nonstandard specifications. The disability-rights movement insists on accessibility and accommodations, not as benevolent gestures toward the “less fortunate” but as the civil rights of a large political minority.

Increasingly, another ideology is evolving from the medical model. The field of public health has gained prominence in recent years, spawning new, perhaps equally coercive beliefs about disability.

Under the public health model, one person’s health or illness becomes a societal responsibility. Health equals good citizenship, whereas illness is expensive, disruptive, and (with genetic intervention) can be preventable.

For all its oppressiveness, the old medical model did claim as its primary concern the well-being of the patient herself. Its definitions and prescriptions could be profoundly misguided, but they were made in the name of serving the disabled person’s needs. In contrast, the public health model aims to serve the dominant (nondisabled) majority, by cutting costs associated with disability. As disability-rights advocate, author, and psychologist Carol Gill points out, the idea of “promoting wellness” sounds benign—but in practice, it can mean that “disenfranchised people suffer.”

A Place at the Research Table

This isn’t just a matter of good science being used for bad purposes. Disability activists question the research itself; we deserve and demand an opportunity to give input into the directions taken by the Human Genome Project and other research endeavors. This means questioning the presumption of total scientific objectivity.¹

CONNECTIONS

What do Arthur Caplan’s comments suggest about the way a society becomes used to an idea? To what extent does Laura Hershey challenge that notion? What does history teach us about the way ideas take root in a society? Do changes happen all at once? Or are they made little by little, step by step?

Hershey critiques “the medical model” for viewing people with disabilities. How does she characterize that model? How does she contrast it with what she calls “the public health model”? Research both models. What do your findings

suggest about the consequences of the way we define one another? About the power of ideas to divide as well as unite people? Why might those divisions encourage separation, conflict, and even violence?

What does Hershey see as the relationship between science and society? What arguments does she use to suggest the way that relationship determines the way people define their universe of obligation? Their ideas about “good citizenship”? In reflecting on your own reading and experience, what events, speeches, or arguments would you add in support of her point of view? What events, speeches, or letters might be used to question her point of view?

Chapter 1 featured an episode from *The Twilight Zone* entitled “The Eye of the Beholder.” It offered a provocative answer to the question “What do you do with a difference?” How does Laura Hershey answer that same question? What does she add to our understanding of such words as *normal* and *healthy*? To what extent is “health” in “the eye of the beholder”?

Medicine is generally viewed as a healing profession and science as a body of knowledge that advances society. What was being “healed” in the society featured in “The Eye of the Beholder”? How was society being “advanced”? What did the episode suggest about the way physicians and scientists promote the values of their society? What did it suggest about the way the values of the larger society influence their work? What does Hershey add to your understanding of those questions? Of the importance of our answers to those questions?

Find out more about the disability-rights movement. When did it begin? To what extent is it an attempt to learn from history? To undo the legacies of that history? What new questions does it raise? How would you go about finding answers to those questions?

1. “Disability Rights Activists Warn of Eugenics” by Laura Hershey. *Resist*, September, 1999. Copyright Resist, Inc.

Raising Moral Questions

Reading 8

As Laura Hershey's comments reveal, genetic research raises tough questions: What does it mean to be human? What is normal? When does life begin? Jeff Lyon, a science writer for the *Chicago Tribune*, summarizes recent discussions focusing on those questions:

Different people simply have different beliefs about how life came to exist and where humans fit in the grand design. "I see life as a process of chemistry," says Norman Pace, Ph.D., a professor of nuclear, cellular and developmental biology at the University of Colorado who is involved in his own quest to isolate the minimal components of life in the lab. "I see life as chemicals talking to one another in sophisticated ways developed through natural selection. Much of it we don't yet understand, but that doesn't mean it's a spiritual matter. These spiritual matters are human inventions."

Even if God exists, say others, we can't call these pursuits "playing God" because they don't reflect how God operates. "In nature, chance determines things," says R. Alta Charo, J.D., professor of law and medical ethics at the University of Wisconsin Law School. "I believe that the essence of God is to let the odds play out." In contrast, she says, "It is the essential attribute of being human to make choices, to exercise control, to have dominion over the natural world." She sees these quests as "completely consistent with what it means to be human on this planet. I believe knowledge is an intrinsic good and that until it is shown to cause harm, it should be encouraged. I believe we should have eaten the apple."

Not everyone shares these views. Lori Andrews, Ph.D., a professor of law at the Chicago-Kent College of Law and a legal specialist in new reproductive technologies, thinks ethicists have become too accepting of a whole laundry list of unsettling scientific quests. "It's like we've become deadened to the ethical dimensions of this," she says. "We're viewing biology as playing with Tinker Toys. There seems to be less resistance to the whole idea of tampering with life." . . .

Richard Hays, former assistant political director of the Sierra Club, finds the lack of loud public debate about [new] technologies "chilling" and holds bioethicists partly to blame. "Many of these academics have become almost apologists for genetic engineering and cloning," says Hays, now executive director of the Exploratory

Initiative on the New Human Genetic Technologies, a network of professionals and activists interested in stimulating that debate. "You rarely find a bioethicist who thinks there's anything fundamentally wrong with these technologies. In Europe it's very different, because they had the Nazi Holocaust. But here we have consumer-driven markets.

Not all bioethicists fit this mold, of course. Leon Kass, M.D., Ph.D., the Addie Clark Harding professor in the Committee on Social Thought at the University of Chicago, is one who doesn't. It worries him, he says, "that the scientists' view of what they're doing could rapidly become the public's view, and that kind of shrunken understanding of what life is—that it's nothing but chemicals—could spread even further in the culture than it already has. It seems to support the materialist view of life—which, even though I'm a trained scientist, I regard as false and inadequate."

Dr. Kass argues further that making a microbe in a lab is not really creating life. "It's a gross exaggeration. It's like reproducing a Mozart symphony. You haven't written the score; you are merely recopying it. I'm bothered that we are coming under the illusion that because we know how to reproduce a few things, we are absolutely in charge. It's a form of hubris and folly." Besides, he says, even if a scientist could create a human from scratch, "would he really be the author or just the instrument of God's handiwork?"

Lisa Sowle Cahill, Ph.D., J. Donald Monan chair of theology at Boston College and former president of the Catholic Theological Society of America, wonders about this, too. "The Bible says we are created in the image of God and God is the Creator," she says. "Does that mean only God creates? Or does it mean that because we are made in God's image we share that ability? If so, who is to say which of our efforts do and don't cross the line? Are we playing God when we wipe out smallpox or cure cancer? Why is it wrong to put a jellyfish gene in a monkey?" It makes us uncomfortable for many reasons, she says, "but defining why it is wrong is more difficult—for me, anyway."

Like many religions, the Catholic Church "doesn't have a final position on a lot of these questions," says Dr. Cahill. "It cautiously welcomes new genetic therapies, but it is concerned about protecting human life and has ruled out research using human embryos. Other things are not settled."

But religion can guide and prod people to think in ways they otherwise might not. "It is the nature of religion to be conservative,"

says Harold S. Kushner, Rabbi Laureate of Temple Israel in Natick, Massachusetts, and author of the forthcoming *Living a Life That Matters: Resolving the Conflict between Conscience and Success*. "Religion says, 'Wait a minute, there are time-tested values here which we should be very slow to disregard.' I'd hope our experience with polluted air and toxic and nuclear waste would have taught us not to go where we can just because we can. I'd hope for a self-imposed moratorium on doing what's possible until we figure out whether we really want to do it."

"In vitro fertilization is wonderful," says Rabbi Kushner. "DNA repair is good. My wife and I had a son who died of a genetic disease, and the idea of fixing what's missing and giving an innocent child life is exciting. But it is one thing to repair, and another to let parents make sure that they have perfect children. My concern is we will lose the knack of loving children who are less than perfect. And my concern with cloning is less ambivalent. I mind very much if we clone people. The whole idea of God's plan for humanity, which calls for people to have children and die, means that one generation, scarred and wearied by its experience, gives way to another that's born fresh and innocent and full of promise. Once you start fooling with that, I think you undermine what God has in mind for the human race. As for creating life artificially, there is something special about humans being created out of an act of love, not chemistry."

Dr. Kass agrees. There is a difference between using the new technologies to cure disease and "using them to engineer so-called improvements," he says. "As a species we don't have the wisdom to know what an improvement would be. The better path is caution and humility before these awesome powers we may never fully understand." Indeed, says Rabbi Kushner, "A scientist ought to stand in awe of the things modern science can do and realize that he has seen the face of God, he hasn't become God."

One thing is clear. These technologies are here to stay, and it's up to all of us to decide what to do with them. "We want to support the most creative and compassionate science possible," says Laurie Zoloth, Ph.D., head of the Jewish Studies department at San Francisco State University. "The bold scientific approach allowed Pasteur and Salk to take leaps that advanced the cause of humankind. But the human capacity for error is enormous. And the human capacity for terrible moral choices is also great. We live in a society in which some 44 million people have too little access to health care. And now we're developing technologies that may give

enormous life-shaping power to people who have the money to control it. So there is a lot to be cautious about.”

Hays is more blunt. “What’s at stake is our common human future. Genetic modification could lead to the creation of separate genetic castes and social division beyond anything in history. There’s no reason to go down this road. We need to summon the maturity to use our technology in ways that affirm rather than degrade humanity. We have to decide which uses we approve of and which we oppose.”

The only way we can do that, says Dr. Zoloth, is through an “enormous national conversation. All we have is the ability to keep talking and raising fears and hopes and encouraging scientists to stop and reflect.” History shows we can achieve great things if we keep talking. “When we wanted to think about race, we had a transformative national conversation. The civil-rights movement was America at its best. The Vietnam War sparked such a conversation. Now we need to have one about genetics. This is exactly the moment when we must decide who controls this technology and on behalf of whom. The need cannot be overestimated. This is far too important to leave in the hands of market forces alone.”¹

Sociologist Barbara Katz Rothman suggests why many people are reluctant to enter into such conversations:

I’m a sociology professor; I get paid to read. I can afford to take a couple of years and read in genetics and bioethics. Most people probably cannot do that; they have other things to do. But the conclusions that I have come to, from all of that technical reading in genetics and in bioethics, is that you don’t need the technical understanding to make the moral judgments.

A group of sociologists in Scotland came to the same conclusion. They ran focus groups of lay people on ethical issues in genetics. They concluded, “Technical competence was neither relevant or important to the majority of participants in our study: they discussed issues without need to display technical competence. When the technical issues were mentioned, the accuracy of the knowledge was irrelevant to the point being made.” They gave an example of a group discussion in a working-class area of Edinburgh: “They are going a little too far. If they want to go and investigate the DNA system and found out that OK somebody’s gay because there is a little slip-up in the XY hormone, we can do an injection and fix that, or a

kid's going to be born mongoloid, rather than abort we may be able to find a way that we can actually sort the gene out. We are getting to the part with genetic engineering if somebody is going to get a deformed child then they just get rid of it and say 'right the next one you produce will be.'"

This person is completely wrong on every technical point going. XY isn't a hormone; mongoloid isn't the current word and it's not a "gene" to be "sorted out." And so what? The question that the person is raising is about drawing moral lines, about drawing lines and going too far. Again, you or I may or may not agree with him, just as we may or may not agree with far more sophisticated language the theologians used. But moral authority does not rest on technical authority: the concerns that are being raised, including the concerns that you personally may feel, are in and of themselves worth discussing.

Genetics, as a science, as a practice and as an ideology, is offering us a great deal. But we have to decide if we want what it has to offer. Those decisions are not technical matters. The technology of it all is overwhelming. Keep bandying about terms like "alleles," "RFLPS," "clines," "22Qlocus," and most of us are left in the dust. Promise a cure for cancer, and end to human suffering, and it's hard to argue. Troy Duster puts it, "Technical complexities of vanguard research in molecular biology and the promises of success incline us to go limp before such scientific know-how."

We cannot afford to go limp. We'll be carried off to places we might very well choose not to go.²

CONNECTIONS

In Chapter 7, physicist Leon Lederman was quoted as saying that scientific knowledge is "not good or evil; it is enabling. Modern science, however abstract, is never safe. It can be used to raise mankind to new heights or literally to destroy the planet . . . We give you a powerful engine. You steer the ship." What does this reading suggest about the difficulties in "steering the ship" in this age of genetic engineering? About the role of a citizen in a democracy in the 21st century?

A number of individuals quoted in this reading speak of the need for "loud public debate." What might such a debate look like? Where might it occur?

Whose voices should be heard? How might those individuals and groups advocate for their points of view?

According to an old saying, a little knowledge is a dangerous thing, but show me the person with so much knowledge that he or she is out of danger. What is the moral or lesson of the saying? To what extent does this reading support that lesson? To what extent does it challenge the lesson?

Rothman believes that people find the language of bioethics and genetics too complicated for the average person. She writes, “Mystification is a political tool: making something complicated is a way of disempowering people.” In what sense is technical language “mystifying”? Why does Rothman believe that mystification is disempowering? Why does she believe that technical language is unnecessary to the central issues in current debates?

How are the issues raised in debates about genetic engineering and cloning similar to the public health issues eugenicists raised in the early 1900s? What differences seem most striking?

In reflecting on the debate over stem-cell research, Kenneth L. Woodard writes:

In any political debate burdened by strong ethical differences, the first casualty is usually language itself. So it is with the ethical issues surrounding stem-cell research—specifically the question of whether days-old human embryos should be destroyed on the promise they offer of therapeutic answers to Parkinson’s and other degenerative diseases. The words we choose to frame our arguments reveal the moral universe we inhabit. Those tiny flecks frozen in tanks of liquid nitrogen—what exactly are they? To the secular eyes of The New York Times editorial page, for example, they are “just clumps of microscopic cells” and thus of no intrinsic moral worth. On the other hand, what the Vatican sees is the moral equivalent of a fully developed “person” and therefore worthy of social respect and legal protection. Most everyone else sees something in between.³

Why does it matter what words we choose to frame our arguments? Gather information about the debate over stem-cell research. What words does each side use to express its hopes and fears? What might history add to the discussion? How might the lessons of the past help all sides in the debate find common ground?

The new technologies raise important issues about what it means to be human. Working in small groups, create a chart showing where each of the scientists,

theologians, and other thinkers quoted in this reading stand in regard to genetic research. Which oppose any limitations on genetic research? Which favor no genetic research? Which fall somewhere in the middle? Analyze your chart. What do the various groups have in common? Whose position is closest to your own?

Working alone or with a partner, find out how at least one other theologian, philosopher, or other thinker views genetic research. Compare and contrast his or her views with those outlined on your chart and those of individuals your classmates researched. What do the various answers suggest about what it means to be human in the 21st century? To be a “good citizen” in this new age?

Find out more about the work of bioethicists. What role do they play in scientific inquiry? What do they add to the process? What are the risks in their work? If possible, invite a bioethicist to speak to the class. Meet in small groups to formulate a list of questions to ask about his or her work. Try to keep your questions open-ended so that you can learn how he or she thinks about an issue, assesses a risk, or judges an outcome.

1. “Playing God: Has Science Gone too Far?” by Jeff Lyon. *Family Circle*, July 10, 2001, pp. 60, 62, 63.

2. Barbara Katz Rothman, *The Book of Life: A Personal and Ethical Guide to Race, Normality, and the Implications of the Human Genome Project*. Beacon Press, 1998, 2001, pp. 38-39.

3. “A Question of Life or Death” by Kenneth L. Woodward. *Newsweek*, July 9, 2001, p. 31.

The Power of History

Reading 9

A number of important questions have guided your study of the history of racism and the eugenics movement: What do we do with a difference? What does it mean to be human? How do we understand human differences? How do we as individuals and as citizens define our universe of obligation? Eugenacists thought that they had clear answers to these questions. They promoted their vision for the nation as scientific and rational even though more often than not their vision was rooted in myth and dogma. Wherever that vision was translated into public policy, the consequences were alarming and too often deadly.

This book has shown that every event, every movement in history, has consequences. It touches not only those who experienced it but also their children and their children's children. Our identity is shaped, at least in part, by our history. How do we remember this history? How can we prevent it from happening again? A number of years ago, a principal answered these questions by sending the following letter to teachers on the first day of the school year:

Dear Teacher:

I am a survivor of a concentration camp. My eyes saw what no man should witness:

- Gas chambers built by learned engineers.
- Children poisoned by educated physicians.
- Infants killed by trained nurses.
- Women and babies shot and burned by high school and college graduates.

So I am suspicious of education.

My request is: Help your students become human. Your efforts must never produce learned monsters, skilled psychopaths, educated Eichmanns.

Reading, writing, arithmetic are important only if they serve to make our children more humane.¹

After reflecting on the lessons of history and his own experiences as an artist in the United States, Jos. A. Smith, a children's book illustrator, wrote a brief essay entitled "Your Kind."

The greatest threat we pose to each other is a fruit of our sublime ability to generalize.

The capacity to manipulate symbols—the root of our talent to

learn and theorize—is also the source of our art.

And ah, see how creatively we use it!

After all, let me transform you into an abstraction and I have permission to deprive you of your basic rights, your freedoms, even (and this is really only another small step) your life.

As long as I see you as a person, I'm lost. If you remain someone who has needs, who laughs and cries, and who feels pleasure or pain, I see a real person who might stop to pet a dog or marvel at a poem. It's too easy to care for you. I might even be tempted to share what I have with you.

Let me turn you into a symbol and you are nothing but a label. I push you back to an emotional distance beyond my power to focus. The details that make you real disappear. You blend into a faceless group I can call "Your Kind."

Thank God I'm not one of "Your Kind."

As long as we divide people into "Us" and "Them," let's not pretend to be surprised when evil smiles back at us from the mirror.²

CONNECTIONS

How does the principal seem to define the word *human*? Compare and contrast his definition with others quoted in this book. What similarities do you notice? What differences seem most striking? Which definition is closest to your own?

What importance does Smith place on symbols? Why does he believe that they must be manipulated with care? How does his warning relate to the history of racism as well as the history of the eugenics movement? How does it relate to current events?

In the introduction to this chapter, German historian Detlev J. K. Peukert was quoted as saying, "The shadowy figures that look out at us from the tarnished mirror of history are—in the final analysis—ourselves." How does Smith underscore the importance of that idea? How do you think he would answer the central question of Chapter 1: What do we do with a difference? How would you answer it now that you have studied the history of racism and the eugenics movement?

One way a community preserves memory and confronts its history is through monuments that honor its heroes, mourn its victims, or commemorate its tragedies. What do you think would be an appropriate way of remembering the

history of racism and the eugenics movement? What would you want visitors to remember? What would you want them never to forget?

Design a monument to some aspect of the history of racism and/or the eugenics movement. For ideas, you may want to explore the monuments and memorials section at facinghistory.org. Share your creation with your classmates by explaining the purpose of your memorial and what you hope your intended audience will learn from it.

1. Quoted in *Teacher and Child* by Haim Ginott. Macmillan, 1972, p. 317.

2. "Your Kind" by Jos. A. Smith in *Tikvah: Children's Book Creators Reflect on Human Rights*. Edited by Norman D. Stevens and Elie Wiesel. SeaStar Books, 1999, p. 80.