
June 15, 2006

THE DNA AGE

That Wild Streak? Maybe It Runs in the Family

By [AMY HARMON](#)

Jason Dallas used to think of his daredevil streak — a love of backcountry skiing, mountain bikes and fast vehicles — as "a personality thing."

Then he heard that scientists at the Fred Hutchinson [Cancer](#) Research Center in Seattle had [linked risk-taking behavior in mice to a gene](#). Those without it pranced unprotected along a steel beam instead of huddling in safety like the other mice.

Now Mr. Dallas, a chef in Seattle, is convinced he has a genetic predisposition for risk-taking, a conclusion the researchers say is not unwarranted, since they believe similar variations in human genes can explain why people perceive danger differently.

"It's in your blood," Mr. Dallas said. "You hear people say that kind of thing, but now you know it really is."

A growing understanding of human [genetics](#) is prompting fresh consideration of how much control people have over who they are and how they act. The recent discoveries include genes that seem to influence whether an individual [is fat](#), has a [gift for dance](#) or will be [addicted to cigarettes](#). Pronouncements about the power of genes [seem to be in the news almost daily](#), and are changing the way some Americans feel about themselves, their flaws and their talents, as well as the decisions they make.

For some people, the idea that they may not be entirely at fault for some of their less desirable qualities is liberating, conferring a scientifically backed reprieve from guilt and self-doubt. Others feel doomed by their own DNA, which seems less changeable than the more traditional culprits for personal failings, like a lack of discipline or bad childhoods. And many find it simply depressing to think that their accomplishments might not be the result of their own efforts.

Parents, too, are rethinking their contributions. Perhaps they have not scarred their wayward children so much as given them bad genes. Maybe it was not their superior parenting skills that produced that Nobel laureate.

Whether a new emphasis on genes will breed tolerance or bigotry for inborn differences remains an open question. If a trait like being overweight comes to be seen as largely the result of genetic influence rather than lack of discipline, the social stigma connected to it could dissipate, for instance. Or fat people could start being viewed as genetically inferior.

Because tests for the genes that influence personality and behavioral traits are not yet commercially available, there is no way for most people to know which ones they have. And even if they could, the newly uncovered genes are thought merely to influence, not determine, their personalities. Biologists are also quick to emphasize the role

environment plays in activating genetic dispositions that might otherwise never be expressed, or mitigating those that are.

But that has not stopped people from acting on their assumptions.

Mr. Dallas's wife, Mari, for instance, convinced that her husband is in some sense hostage to his daredevil genes, has insisted he draw the line at certain activities.

"If he had his choice, he would be getting a motorcycle," said Ms. Dallas, a pediatric oncologist. "I don't think that's such a good idea."

The public embrace of genetics may be driven as much by wishful thinking as scientific truth. In an age of uncertainty, biology can appear to provide a concrete answer for behavior that is difficult to explain. And the faith that genetics can illuminate the metaphysical aspects of being human is for some a logical extension of the growing hope that it can cure disease.

"More and more stories about who we are and how we live are becoming molecular," said Paul Rabinow, an anthropologist at the [University of California](#), Berkeley, who studies the interrelation of science and culture. "The older liberal worldview that it's all a question of willpower is still very present in America, but genetics has become a strong countercurrent."

That may be partly because the science has become more credible. Armed with the human genome sequence, along with a catalog of genetic variation in the human population, and tools that can inexpensively gauge any individual's genetic makeup, scientists can now pinpoint the genes associated with inherited traits.

Developed to dissect the genetic basis for complex ailments like [heart disease](#) and cancer, the methods are now being applied to less pressing areas like the way genes may influence [sexual desire](#) or [attention deficit disorder](#). While scientists have yet to demonstrate any genetic cause that directly affects such behavior, they have found plausible associations. And for many people, that is all that matters.

"The scientific facts have changed," said Steven Pinker, a psychologist at [Harvard](#) who documented cultural resistance to the influence of genetics on behavior in his 2002 book "The Blank Slate."

"We now have real evidence that some of the variation in personality is inherited," Dr. Pinker said, "and I think it may be affecting people's everyday choices."

Some people persist in believing in the power of the human spirit, but a growing number prefer to submit it to a DNA test. In the wake of the recent discovery that millions of people who carry a specific genetic variation are more likely to gain weight, Mike DeWolfe, a computer programmer who considers himself overweight, cannot help wondering if he is one of them.

"I really would like to have a test, because it would help reduce my guilt over it," said Mr. DeWolfe, 38, of Victoria, British Columbia, noting he would also welcome a genetic treatment as an alternative to his constant [dieting](#). "That would make a big difference."

There is nothing new about the idea that temperament and behavior are shaped by genetic endowment. Families

have long clucked over a trademark stubborn streak showing up in a new generation, or crowed about inherited creative abilities. But as science begins to corroborate intuition, the public is reassessing where credit and responsibility lie for character traits that may be in part genetically preordained.

"To summarize, want to live until a ripe old age? [Have parents that live long](#)," Joe Pickrell, a 23-year-old graduate genetics student wrote [in a recent blog entry](#). "Think you're a friendly, peaceful guy 'cause your mom raised you right? [Think again](#). Able to try drugs just a couple times and never get hooked because of your strong will? [Nope](#)." (Mr. Pickrell, of Chicago, punctuated each clause with a link to a recent scientific journal article describing the genetic component of life expectancy, aggression and susceptibility to drug addiction.)

Jacki Thorpe wondered for years why her older sister could quit [smoking](#) so easily, while her own numerous attempts have failed. After all, their upbringing had been virtually identical, and they had started smoking together when they were 12 and 14. Then she heard about a genetic variation that predisposes some people to nicotine addiction.

"I have it," guessed Ms. Thorpe, 42, an administrative assistant in Whidbey Island, Wash. "My sister doesn't." Determined to fight her presumed genetic destiny, Ms. Thorpe has sworn to try quitting one more time this summer.

A [Stanford University](#) student in a focus group on smoking and genetics was more accepting: "Let's say I'm still addicted to cigarettes 10 years from now," the student said in a telephone interview, asking that his name not be used because he has concealed his smoking habit from his family. "It might feel like it's not a total personal failure, just that certain things made it harder for me than other people. It kind of takes the weight off."

Friends and family members who worry about behavior that seems unhealthy or self-destructive sometimes suspect that blaming genes is an easy out. When Representative Patrick J. Kennedy, Democrat of Rhode Island, cited his family's history of addiction in admitting to a prescription drug addiction after he crashed his car near the Capitol last month, for instance, some scoffed. "Kennedy blames crash on 'car accident gene,'" read the headline on [Antimatternews.com](#), a satirical blog, an allusion to the 1969 crash in which his father, Senator [Edward M. Kennedy](#), was driving and a passenger was killed. Some bioethicists warn that the embrace of genetics as an explanation for troubling behavior threatens to let society off the hook, too. Taxing cigarettes, banning smoking in bars and not glamorizing it in movies is far more likely to lower smoking rates than [drugs tailored to certain genotypes](#), these critics say.

Still, at Hazelden, an addiction-treatment center in Minnesota, teaching about genetics has become standard. Learning that roughly half the risk of alcohol addiction is associated with genes can remove a burden of guilt that otherwise serves as an obstacle to recovery, said Dr. Marvin D. Seppala, the center's chief medical officer.

"They've driven drunk, and they have children, and they're saying, 'I can't believe I did this,'" Dr. Seppala said. "To learn they [have a disease with a genetic component](#) like other diseases really helps them understand these crazy sort of behaviors."

As genetics comes to rival childhood experience as the favored lens through which to interpret behavior seen as deviant, parents who blamed themselves for their children's disorders are also finding some relief. Recent research has found that conditions like [anorexia](#) or [autism](#), once thought to be largely psychological, are at least

partly genetic.

"You would wonder, 'What's wrong, what aren't we providing?'" said Kathy Ramsay, 55, a legal secretary in Sacramento who has had three daughters who suffered from anorexia. The new DNA paradigm, however, can come with a new guilt trip.

"I passed it on to them," added Ms. Ramsay, whose daughter Heather volunteered for a genetic study of anorexia at the [University of North Carolina](#) after reading about the research in her local newspaper this year. "It was in me."

Some adults are more forgiving of parents' sins they now consider DNA-enabled. Others get angry, however irrationally, for being saddled with inferior genes. Tim McGrath, 45, said learning about the genetics of alcoholism had made him more determined not to follow the path of his father. Still, he is haunted that he has seen his own fate.

"It's like this demon out there, lurking," said Mr. McGrath, a teacher in Chicago. "And without the proper vigilance, or whatever, it could strike."

By suggesting a genetic basis for behavior previously believed by some to be the result of character flaws, scientists and others say the discoveries could make for more understanding of human differences. Some overweight people, for instance, hope it will reduce the stigma associated with being fat.

"Maybe it will help the rest of the world realize it's not lack of willpower, it's not stubbornness, it's not laziness," said Jane Perrotta, 52, a medical writer and contributor to the weight-loss blog [The Skinny Daily Post](#).

"It's the hand you're dealt," Ms. Perrotta said.

Others fear that when certain behaviors once ascribed to personal choice are seen as genetic, the next step will be not tolerance for difference, but support for intervention. On a "fat-acceptance" e-mail list, several members suggested recent research will lead only to new ways for them to lose weight through genetic alteration, rather than be accepted as they are. And when scientists caused [fruit flies to pursue flies of the same sex](#) by altering a gene last year, some gay-rights advocates worried it would lend credence to the notion that homosexuality could be "cured."

People could also find their genes being held against them. Already, some scientists suspect a specific gene plays a role in violent behavior, for instance, and a discussion has already begun over how people bearing such genes should be treated.

"If we find a murder mutation, are we going to be more accepting of murderers, or are we going to lock them up even more tightly?" asked Jeffrey M. Friedman, director of the Starr Center for Human Genetics at [Rockefeller University](#). "The more we find genes that play a role in determining all sorts of attributes, the more we're going to face these kinds of ethical issues."

Of course, for traits that are socially desirable, people may not be as eager to accept genetic explanations that seem to trivialize their skills or accomplishments. When scientists this year found two gene variations that appear at higher rates in professional dancers than in the general population, many dancers bristled at the news. In

online message boards for the ballet magazine Pointe, several writers said success in dance was the result of hard work, passion and good mentors. "Being a dancer requires so much more than what's there in your body, an emotional strength," said Virginia Johnson, editor of Pointe and a former principal dancer with the [Dance Theater of Harlem](#).

She paused.

"That genes can't really — well, I guess that's genetic, too, isn't it?"

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