

# FREE RADICALS

**H**ow are you feeling? I hope you haven't stolen any more shoes lately." "I'm much better, thanks. I did steal a pair about two weeks ago, but nothing since then. I think I'll be over this soon."

This conversation would be absurd in our world, but not in Erewhon, where attitudes about health and criminality are turned upside down. The citizens of Erewhon, a fictional land created by Samuel Butler 130 years ago, openly discuss their criminal weaknesses, because society and the government are sympathetic. Erewhonians believe that people can recover from such conditions with enough encouragement and personal effort. Those with physical ailments, however, especially protracted and serious ones, carefully hide them. Being ill is disgraceful, an affront to the community likely to infect others with similarly bad behavior. Offenders are tried in the courts and punished according to the severity of the offense.

While people in our world may keep mum on their medical problems for a variety of personal reasons, fear of Erewhonian reprisals rarely enters into it. Recently, however, consumer rights and health care advocates have begun to worry that advances in biomedical science could threaten our privacy and physical well-being. They're uneasy about how our growing knowledge of human genetics could affect the health care and life insurance of certain groups and individuals. As we crack the genetic code and understand the underlying causes and predispositions for various medical problems, will this new knowledge be used against those with "unlucky DNA?"

The health care issue is largely (although not entirely) a question of insurance coverage—who will get it, and how much they will pay. While

insurance companies exist to provide insurance coverage to policyholders, they also exist to make money. Insurers go to great lengths to estimate their risks and expected payouts, so that they can be competitive

we, as a society, really charge certain people more or boot them out of the insurance pool altogether?

In fact, we already do both. Consider automobile insurance: younger drivers pay more for auto insurance than older drivers do, because we know from statistical evidence that their accident rates are higher. Most of us (once we get out of that age group, anyway) accept this as reasonable. We also accept that the annual premiums of term-life insurance holders will escalate with age, because their statistical chance of dying within the next year increases. It seems only fair.

Insurance as a social institution derives from the uncertainty of life. Bad things might happen, but we don't know to whom, so we pool our resources and our risk collectively to protect ourselves individually. We've learned to make certain adjustments, as in the above examples, that we believe are fairer, using statistical knowledge of risk. However, as scientific research enables us to go from statistical knowledge about groups to causal relationships involving specific individuals, complex issues arise about how insurance should be applied and what is fair.

Returning to the example of car insurance, for example, we make all the young drivers pay more for insurance, because we can't know which ones will be the bad drivers. But if we could know, we could raise only the bad drivers' premiums—or refuse to insure them. But that's car insurance, and we're really concerned here with health care; could we really exclude individuals with a particular condition from medical coverage because of the high likelihood that they'd collect benefits? Almost anyone who has applied for health care coverage knows the answer—insurers will not cover "pre-existing conditions." Ironic, isn't it? The one time you can't have cover-



## THE DILEMA OF Unlucky DNA

by Dale Hall

and profitable while fulfilling their obligations to policy holders. Any data that can help them refine those estimates—which, in the future, could include DNA profiles—are eagerly embraced.

The insured also have a financial stake in this issue. Their goal is to get the coverage they need at the lowest possible cost. By excluding high-risk individuals from the pool of insured or making them pay more, the overall risk and payout can be reduced, and most policy holders will then pay less. Considering only the economic interest of the majority, this seems to be a good idea. But would

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age is when you know you need it. And that's precisely where genetic knowledge comes in: one might say that genetic knowledge is essentially a way of identifying pre-existing conditions with more certainty.

The question of what is fair has two sides, of course. If only those with "unlucky DNA" know about their health weaknesses, might they use that knowledge to take advantage of everyone else? The rest of us are playing the odds, while those who know exactly what insurance they need could tailor their coverage for big payoffs. If you know something that allows you to beat the system, you're like a card counter at the blackjack table—and card counters get thrown out of casinos.

As science grows ever more powerful, it unlocks secrets and generates knowledge that challenge the very foundations of society. Increasingly, we're grappling with new economic, cultural, and ethical questions that arise from our newfound knowledge, and the issues are often deeply divi-

sive. In the case of genetics and health care, my point here is to suggest that the issue is much more complex than it appears in TV sound bites. No matter what course we take, there will be winners and losers.

While the debate goes on, we shouldn't lose sight of the tremendous promise genetic research holds for medical advances. Once we understand the genetic bases for diseases, we can determine whether and how prevention or cure can be effected. Armed with this knowledge, we can make better decisions on how to spend medical research money. We may succeed in wiping out or controlling many of the medical conditions that afflict humanity. The citizens of Erewhon will salute us. ■