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EDITORIAL

Brain, Drugs, and Society

It was at a symposium on the cognitive neuroscience of drug abuse that the idea came to me: Scientists need to speak out about the total problem of drug use. Excitement was in the air at this meeting; the National Institute on Drug Abuse (NIDA) had finally acknowledged that cognition—a person's beliefs and goals—plays a role in drug abuse. NIDA announced that it would now fund research in this area. That was the good news; the bad news was that Uncle Sam was only offering $1.5 million for the enterprise.

Until now, drug abuse research has been dominated by simple behavioral models that use outmoded theories of reinforcement to explain drug addiction, such as the mistaken notion that users stay addicted because drugs provide an intermittent schedule of reward. Neuroscience took up such ideas, and the field largely became locked into the view that if it could be determined exactly what neurotransmitter responds to what drug, the drug addiction problem would be solved. NIDA now seems to have recognized that these ideas have only limited utility and has invited cognitive neuroscientists to participate in the hunt for a deeper understanding of drug abuse.

The importance of cognition is illustrated by the fact that the overall pattern of U.S. drug use has remained constant for years. Although many people experience drugs, only a small number become addicted. Specifically, about 70 percent of Americans have tried illicit drugs, but less than 20 percent have used an illicit drug in the past year and only a few percent have done so in the past month. It is also relevant that drug use drops dramatically with age; past age 35, the casual use of illegal drugs virtually ceases. All of these facts suggest that simple learning and reinforcement concepts do not explain the drug experience. Cognition is central to the pattern. Education, alternative choices, and competing temptations all play a role in determining whether the user is seeking occasional reinforcement from drugs or heading for chronic use. The mere taking of drugs, even on a casual basis, does not mean that the user is on the slippery slope to doom; most people eventually walk away from the hedonistic pleasures of illicit drugs.

At the same time, it is a challenge for cognitive neuroscience to understand why a significant number of people can't walk away from drug use. It is now clear that some people cannot stop taking drugs even after their body chemistry has been normalized after abstinence. They are easily set off and go back to destructive drug use. Some recidivists are mentally disturbed and are medicating themselves, and some may suffer from a genetic predisposition to drug use, but most recidivists have built up theories about why they do what they do. Fixing body chemistry does not fix these cognitive patterns and beliefs. Better understanding of this crucial cognitive component will take serious money. Enter politics.

When I was asked to walk the congressional halls for the Society for Neuroscience in an attempt to talk up more money for brain research, the staff people all said the same thing. In effect, "It's a closed system: If you want more research money, you tell us which program to take money from. Don't think the extra money comes from making one less gun; it comes from the domestic budget. What is it you want to cut?" There is an easy answer to this question in a rational world. Since 1982, the federal budget for drug control programs has gone from $650 million to over $13 billion. What has been the effect? Overall drug availability, purity, and cost have not changed, and the percentage of the population using drugs has remained largely constant, with variations here and there suggesting declines in use because of education. These programs have thus produced no measurable effect on the drug supply line. Does the U.S. government confiscate some drugs? Sure, but the supply is infinite and new sources pop up like tulips. Yet the government thinks it is newsworthy that $1.5 million will be applied to what is probably the central issue in human drug addiction. This is a silly amount.

I know where I would get the money for this research. Let NIDA have one of those drug control billions and you will see some real advances. It is time for scientists to talk back to the politicians. As they say, this is a no-brainer.

Michael S. Gazzaniga

The author is the David T. McLaughlin Distinguished Professor and director of the Program in Cognitive Neuroscience at Dartmouth College in Hanover, NH. E-mail: michael.s.gazzaniga@dartmouth.edu