



No "Smoking" Gun: Pitt Research Indicates Teen Marijuana Use Does Not Predict Drug or Alcohol Abuse

By Kelli McElhinny

Marijuana is not a "gateway" drug that predicts or eventually leads to substance abuse, suggests a 12-year Pitt study.

Moreover, the study's findings call into question the long-held belief that has shaped prevention efforts and governmental policy for six decades and caused many parents to panic upon discovering a bag of pot in their child's bedroom.

Pitt researchers tracked 214 boys beginning at ages 10-12, all of whom eventually used either legal or illegal drugs. When the boys reached age 22, they were categorized into three groups: those who used only alcohol or tobacco, those who started with alcohol and tobacco and then used marijuana (gateway sequence), and those who used marijuana prior to alcohol or tobacco (reverse sequence).

Nearly a quarter of the study population who used both legal and illegal drugs at some point—28 boys—exhibited the reverse pattern of using marijuana prior to alcohol or tobacco, and those individuals were no more likely to develop a substance use disorder than those who followed the traditional succession of alcohol and tobacco before illegal drugs, according to the study, which appears in this month's issue of the *American Journal of Psychiatry*.

"The gateway progression may be the most common pattern, but it's certainly not the only order of drug use," said Ralph E. Tarter, professor of pharmaceutical sciences in Pitt's School of Pharmacy and lead author of the study. "In fact, the reverse pattern is just as accurate for predicting who might be at risk for developing a drug dependence disorder."

In addition to determining whether the gateway hypothesis was a better predictor of substance abuse than competing theories, the investigators sought to identify characteristics that distinguished users in the gateway sequence from those who took the reverse path. Of the 35 variables they examined, only three emerged to be differentiating factors: Reverse pattern users were more likely to have lived in poor physical neighborhood environments, had more exposure to drugs in their neighborhoods, and had less parental involvement as young children. Most importantly, a general inclination for deviance from sanctioned behaviors, which can become evident early in childhood, was strongly associated with

all illicit drug use, whether it came in the gateway sequence, or the reverse.

While the gateway theory posits that each type of drug is associated with certain specific risk factors that cause the use of subsequent drugs, such as cigarettes or alcohol leading to marijuana, the Pitt study's findings indicate that environmental aspects have stronger influence on which type of substance is used. That is, if it's easier for a teen to get his hands on marijuana than beer, he'll be more likely to smoke pot. This evidence supports what's known as the common liability model, an emerging theory that states the likelihood that someone will transition to the use of illegal drugs is determined not by the preceding use of a particular drug but instead by the user's individual tendencies and environmental circumstances.

"The emphasis on the drugs themselves, rather than other, more important factors that shape a person's behavior, has been detrimental to drug policy and prevention programs," Tarter said. "To become more effective in our efforts to fight drug abuse, we should devote more attention to interventions that address these issues, particularly to parenting skills that shape the child's behavior as well as peer and neighborhood environments."

Indeed, according to the study, interventions focusing on behavior modification may be more effective prevention tactics than current antidrug initiatives. For example, providing guidance to parents—particularly those in high-risk neighborhoods—on how to boost their caregiving skills and foster bonding with their children, could have a measurable effect on a child's likelihood to smoke marijuana. Also, early identification of children who exhibit antisocial tendencies could allow for interventions before drug use even begins.

Although this research has significant implications for drug abuse prevention approaches, Tarter notes that the study has some limitations. First, as only male behaviors were studied, further investigation should explore if the results apply to women as well. Also, the examination of behaviors in phases beyond alcohol and marijuana consumption in the gateway series will be necessary.

The research was funded by the National Institute on Drug Abuse.

Andrew Hryckowian

RESEARCH, Continued from page 3

summer working in the lab, and he was about to begin his junior year at Greater Latrobe Senior High. "We had two high school teachers here that summer, learning the phage-hunting process," Jacobs-Sera remembers. "In doing their protocol, they got stuck at one point. And the way it works in the Hatfull laboratory is, everybody helps everybody else. You ask someone working near you, 'Can you help me with this?' Well, in this case, these teachers went to Andrew for help, and he answered their questions.

"On the way back to their lab station, one teacher turned to the other and asked about Andrew, 'What year do you think he's in?' Overhearing the question, I said, 'He's a junior,' and they nodded and said, 'Oh, yes, that sounds about right. A junior.'

"Then, after a well-timed pause, I added: 'In high school.' And these two teachers were just astounded that Andrew wasn't a college student. That's how competent and 'together' he'd become, and I think the success and satisfaction he gained from working in Dr. Hatfull's lab contributed a lot toward making him that way."

A friendly, articulate young man with an iron-pumper's build, Hryckowian today seems improbably poised for a college sophomore. Surprisingly, he didn't give much thought to attending college until he began working in Hatfull's lab. "Once I got involved in the phage-hunting program as a high school student, I thought: Well, I go to Pitt already, in a way, and it's a great place. So, why not enroll here?" he recalls. "I considered other schools, too, but Pitt offered this excellent research opportunity that I could pursue as an undergraduate. At a lot of other universities, I probably would have had to wait until I was a graduate student before getting an opportunity like this."

A microbiology major, Hryckowian is thinking about continuing at Pitt to earn his Ph.D. "Medical school is an option, too," he adds. But whatever degree he goes after, and whether or not his current scholarly specialty proves to be a career-long interest or merely a "phage" he's going through, Hryckowian ultimately wants to be a research scientist.

"I've been bitten by the research bug, I guess," he says, "and I like it a lot."

Pitt Partnering With City, Carnegie Mellon, Others On Mapping System to Help Revitalize Communities

MAPPING SYSTEM, Continued from page 1

"Together, we are showing the community that we are more transparent than ever before," Pittsburgh Mayor Luke Ravenstahl said during a Dec. 4 news conference announcing PNCIS. "We will lead the way as we move forward with our investment in cutting-edge technology and management tools to enable our city to run efficiently, giving us and our partners the tools to make smart, prompt decisions based upon solid data."

PNCIS is a property-information system that collects integrated information on community conditions. It gives community leaders regular, direct use of information on a wide array of topics and issues. The PNCIS integrates more than 50 key indicators from multiple data sources to provide a dynamic view of neighborhood conditions. Consistent data for all neighborhoods is available to every participating organization, and the PNCIS provides one point of contact for users and data providers.

By coordinating all data collection and processing, participating organizations can spend their time analyzing and using the information rather than gathering it. To date, the PNCIS has assisted communities on issues such as vacant property, public safety,

nuisance bars, and foreclosure prevention.

"For community-development corporations to develop strategies and programs that respond to real community needs, we must have access to real-time data about neighborhood conditions," said Kate Trimble, executive director of the Lawrenceville Corporation. "In the past, this type of data was either unavailable or incredibly time-consuming and burdensome to collect on a regular basis. The PNCIS database puts all the information that we need at our fingertips, in a user-friendly, Web-based format."

A crucial component of the PNCIS project is understanding how to use the system and the data it produces.

"University team members will conduct training sessions for community and city users on how to apply the information and tools contained within the system to the everyday issues that arise in communities," said Sabina Deitrick, a professor in Pitt's Graduate School of Public and International Affairs. "The PNCIS is strengthening the universities' connections to their communities. It enhances the education and skills of our students as they work with community partners on neighborhood revitalization."

Not Too Late to Give to United Way

Pitt's United Way campaign is still accepting contributions.

The campaign, which officially ended Nov. 23, has raised \$423,057 toward its \$500,000 goal. Contributions may still be made by completing the United Way pledge form distributed at the start of the campaign by individual Pitt United Way representatives or via the Web at www.pitt.edu/~united.

For more information, call Anne Franks in Pitt's Office of Institutional Advancement at 412-624-4089.



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