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## HOW SCIENCE IS SKEWED TO FUEL FEARS OF MARIJUANA

Reports That the Drug Causes Psychosis Have Been Exaggerated, Writes Dan Gardner in the Last of a Two-Part Series.

Aside from unverifiable conjecture, supporters of the status quo on marijuana rely on a few claims that can be checked against the facts.

Most commonly, they argue marijuana is far more potent today than ever before and therefore more dangerous.

They say recent research proves that marijuana causes psychosis, and to liberalize the law would risk, as Margret Kopala wrote recently in this newspaper, "turning young users into a psychological underclass."

Fears that marijuana can shatter the mind are far from new. More than a century ago, the widespread consumption of marijuana in India alarmed missionaries, who linked the drug to a perceived increase in the number of people admitted to Indian mental institutions. In 1893, the British government directed the Indian Hemp Drugs Commission to investigate.

After extensive work, the commission found no evidence marijuana causes insanity.

It concluded marijuana use in India was not much different than alcohol consumption in Britain.

"That which is moderate and harmless to one man may be too much for another," it noted.

"And the moderate habit may undoubtedly develop into excess in some cases where excess might not have been looked for. It is so with all intoxicants; but moderation and excess ought to be distinguished. And on the whole, the weight of the evidence is to the effect that moderation in the use of hemp drugs is not injurious."

The commission's moderate and reasonable perspective was abandoned in the century that followed. Opinion split into two extreme positions, with one side arguing that the consumption of marijuana is harmful under any circumstances while the other, appearing in force only after marijuana became popular in the 1960s, tends to portray marijuana as wholly harmless.

Much of the focus of this long debate has been on marijuana's alleged effects on mental

function, and over the past century an enormous amount of research has looked for damage done by the weed. Unfortunately, much of the research, on mental health and other concerns, was dubious and its appearance followed a predictable cycle: The research is released to lurid headlines, the evidence is used as proof that the law must be tough or get tougher, and later, when subsequent research fails to bear out the original study, the fear is slowly and quietly forgotten.

Often, particularly in the past, the cycle was initiated by junk science. But even solid research today can be the cause of spurious fears when it is, as so often happens, grossly misreported.

A recent example comes from a Globe and Mail column two weeks ago in which Dr. Jean Marmoreo warned that smoking marijuana can "fry your brain." Her proof: A 2002 study by Peter Fried of Carleton University found that those who smoke more than five joints a week suffered a "five-point" drop in IQ.

The drop was actually four IQ points, not five. What the study also found -- but Dr. Marmoreo did not mention -- was that while young people who had never smoked marijuana showed an average increase in IQ of 2.6 points, those who had smoked marijuana but had stopped had an IQ jump of 3.5 points. Most curiously, participants who were currently smoking between one and five joints a week saw their IQs increase by 5.8 points.

The results are obviously a mixed bag. The only clear conclusion that can be drawn from the study, based on the fact that the IQ drop of heavy users wasn't found in former users, is that, in the words of the authors, "marijuana does not have a long-term negative impact on global intelligence."

After a century of science, pseudoscience and distortions, it's obvious that new claims about the harms of marijuana use should be treated with a healthy dose of skepticism. Patience is also in order: Science takes time to draw conclusions.

The newest such claims are troubling. "Study Links Pot Smoking, Psychosis," the National Post reported earlier this month after a New Zealand study showed daily marijuana smokers were 1.6 to 1.8 times more likely to develop hallucinations and other psychotic symptoms that are the hallmark of schizophrenia.

It wasn't the first study to reach that conclusion. Research on Swedish conscripts and an earlier New Zealand study also concluded adolescent marijuana smoking raises the risk of schizophrenia.

These are significant findings, but do they justify fears that, as a former British cabinet minister wrote in a London newspaper, "a whole generation" will soon be hearing voices in their heads? Are we really on the verge of creating Ms. Kopala's "psychological underclass"?

Mitch Earleywine says no. A professor of psychology at the University of Southern California and author of *Understanding Marijuana*, Mr. Earleywine notes that if marijuana caused schizophrenia, there should be a clear correlation between rates of marijuana use and rates of schizophrenia. But there is no such correlation in the United States, he says.

Wayne Hall of the University of Queensland looked for the same correlation in Australia, where marijuana use has exploded over the past three decades. Again, nothing was found.

Mr. Earleywine is also skeptical of research linking marijuana use and schizophrenia, particularly the latest New Zealand study, led by David Fergusson, a respected researcher with the Christchurch School of Medicine and Health.

Mr. Earleywine notes that Mr. Fergusson and his colleagues did not actually diagnose psychosis in the marijuana smokers they studied. Instead, they administered a short mental health questionnaire that asked if the respondent had ever experienced any of 10 "psychotic symptoms."

Some symptoms are clearly troubling, such as "hearing voices that other people do not hear" and having "the idea that someone else can control your thoughts." Others are not so obviously strange: feeling that other people cannot be trusted; feeling that you are being watched or talked about by others; never feeling close to a person; and having ideas and beliefs that others do not share.

Among 25-year-olds who had never smoked marijuana, the mean number of symptoms reported was 0.64. That number rose among those who smoked marijuana: Less-than-monthly users reported 0.89 symptoms, while daily marijuana smokers reported 1.95 symptoms. That rise, modest though it may be, is statistically significant.

But Mr. Earleywine believes there might be less here than meets the eye. In a letter to be published in the journal that published the study, Mr. Earleywine notes that it is fairly common for marijuana intoxication to cause feelings of paranoia, but the researchers "give no indication that respondents were asked to distinguish between feelings experienced while intoxicated and feelings experienced at other times. Thus, we are left with no clue as to whether these are long-term effects actually indicative of mental illness or simply the normal, passing effects of acute intoxication."

The researchers also failed to consider, Mr. Earleywine writes, "that what might be an indication of psychosis in other circumstances could be an entirely normal reaction for people who use marijuana. Someone using a substance that is both illegal and socially frowned-upon almost by definition has 'ideas or beliefs that others do not share.' This is not a sign of mental illness, but rather an indication of a rational, thinking person realistically assessing his or her situation. Considering the widespread use of undercover officers in drug stings, the same can be said for 'feeling other people cannot be trusted.'"

Responding by e-mail, Mr. Fergusson defends his study's methodology. "The

suggestion that we should have asked respondents whether their symptoms were due to cannabis intoxication is simply not viable, given our interest in daily and weekly users."

As for the role for the influence of social disapproval in how people answered the questionnaire, Mr. Fergusson says it's "not consistent with the evidence since linkages have been found between cannabis use and psychotic symptoms in societies with both liberal and conservative attitudes."

Scientists agree that using drugs -- of any kind -- is unhealthy for people afflicted with schizophrenia because it can increase the chances of psychotic breaks. Based on that link, Mr. Earleywine speculates that as the research advances, it will show that marijuana use might promote schizophrenia in individuals already vulnerable to the disease, but not otherwise.

"It wouldn't surprise me if, say, people who have schizophrenics in their family might end up having their first (psychotic) break earlier in life if they use cannabis. But the idea that the cannabis is actually causing schizophrenia; I still don't feel the data support that. I think that somebody who has no psychosis in the family isn't going to smoke pot and suddenly be psychotic."

Mr. Fergusson disagrees. The evidence to date suggests there is some risk for individuals who are not predisposed to schizophrenia, although it is far from conclusive.

In his view, the state of the science is that "the heavy use of cannabis may lead to small but detectable increases in the risk of both psychosis and psychotic symptoms but considerable uncertainty remains in this matter. The detrimental effects of cannabis are more likely to occur for those with a pre-existing tendency to psychosis."

Mr. Fergusson's summary is telling. He says the risk is "small but detectable." It is the result of "heavy use." And it is higher among vulnerable individuals. It is a carefully drawn, nuanced picture -- and it looks nothing like the alarming images journalists and politicians have drawn using his research.

"It is quite clear that media claim that our research shows cannabis use causes psychosis are exaggerated," Mr. Fergusson says.

Science is being subordinated to politics, Mr. Fergusson feels. "Those commenting on our research appear to come from relatively entrenched positions about the issue of cannabis. Those holding liberal reformist attitudes have sought to play down the evidence, whereas those with conservative attitudes have used the evidence to portray cannabis as being a major threat to mental health. In each case, there has been an attempt to present an argument that should be reported in subtle shades of grey as though it were a black-and-white issue. In my view, both sides are correct and both do a disservice to reasoned debate on this issue."

Mr. Fergusson is adamant that his study, and those that preceded it, should not be used as

political ammunition. The findings are not "grounds for the banning of cannabis as a medical treatment (nor or they) a barrier to the decriminalization of cannabis possession," he writes. "What the evidence suggests is that cannabis is a psychoactive substance whose heavy use may have adverse effects and which should be used with appropriate caution."

The language is modern, but the sentiment -- moderate and reasonable -- is identical to that of the Indian Hemp Commission of 1893.