Cannabis, alcohol, and public safety: Knowing what you don't know

October 31, 2013 By Mark Kleiman @markarkleiman

[See update and correction below. Apologies to Adam Nagourney and Rick Lyman.]

The main problem with journalism, in a world full of unknowns and uncertainties, is that faith is news and doubt isn't.

Mark Anderson of Montana State and Daniel Rees University of Colorado at Denver presented an interesting paper at this year's meeting of the International Society for the Study of Drug Policy, using some moderately sophisticated statistics to investigate the relationship between cannabis availability, alcohol consumption, and traffic accidents. The paper moved my opinion about whether cannabis and alcohol are substitutes or complements from "Not a clue; could go either way" to "There's a little bit of evidence for substitution" (that is, for the proposition that making pot more available or cheaper would lead to less heavy drinking).

Net substitution would be a big deal, if true, because alcohol does so much more harm than cannabis that a small reduction in the alcohol problem would, in social-cost terms, outweigh even a big increase in the cannabis problem due to legalization.

I say "a little bit of evidence" because the change in cannabis availability due to medical-marijuana laws is poorly measured; because the changes in cannabis availability due to medical marijuana laws are small compared to the changes that would result from full legalization; and because the short-term effects might not only be larger or smaller than, but might not even be in the same direction as, the long-term effects. (Remember the guy who jumped off the Emprire State Building. Being asked as he passed the fiftieth floor, how the experiment was going, he replied, "So far, so good!")

Unfortunately, Anderson and Rees decided to build on their finding, and other findings from the literature, to make a strong claim: "We expect that the legalization of recreational marijuana in Colorado and Washington will lead to increased marijuana consumption coupled with decreased alcohol consumption. As a consequence, these states will experience a reduction in the social harms resulting from alcohol use."

Even more unfortunately, Adam Nagourney and Rick Lyman of the *New York Times* decided to take that claim at face value, ignoring the papers in the same issue of the same journal by Rosalie Pacula of RAND and Eric Sevigny of the University of South

Carolina arguing that the Anderson and Rees claim is more than the current data can support.

Pacula and Sevigny didn't make the opposite claim: that legalization will increase heavy drinking. Had they done so, normal journalistic practice would have been to cite the two conflicting opinions. But since they brought in the Scotch verdict of "Not Proven," Nagourney and Lyman simply ignored what they had to say. That let them use the Anderson and Rees claim to support the theme of the story, well-captured by the headline "Few Problems with Cannabis for California."

[Update and correction:

The above paragraph is inaccurate about the sequence of events. Adam Nagourney writes:

You were wrong to assume I was aware of the dissenting studies and chose to ignore them. I was not; if I was, I most certainly would have mentioned the concerns. Professor Rees gave me an advance copy of their study; I did not have an advance copy of the journal. Again, if I had, I most certainly would have raised the fact that other people question their assertions.
As someone who has been doing this a long time, I can tell you that this: "The main problem with journalism, in a world full of unknowns and uncertainties, is that faith is news and doubt isn't" is not true, at least for me or the place I work. One of the great things about the *New York Times* is that there is room for nuance and subtly. A story is stronger journalistically if it addresses both sides of an argument.

This time I have to give myself an F in Journalism 101; I should have checked with Nagourney before criticizing his work.

Very sorry, sir! Won't happen again, sir!]

In order to know how cannabis legalization would affect heavy drinking, you'd have to know:

1. The extent of the price decline.
2. The extent of the change in other conditions of availability and use (convenience, marketing, perceived product quality and variety, stigma, legal consequences, social customs).
3. The responsiveness ("elasticity") of demand to price changes, consisting of two components: the "participation elasticity" measuring changes in how many people use cannabis at all, and the "conditional elasticity" measuring changes in consumption-per-user.
4. Ditto for responsiveness to changes in non-price factors.
5. The "cross-elasticity" between cannabis and alcohol.

6. For all of these, you'd need estimates about the long-term effects of lasting changes, not the immediate effects of transient changes.

All Anderson and Rees can show are reasonable but not perfect estimates of the short-term effects of relatively small and poorly measured short-term changes in price and availability on various outcomes. They're not within a million miles of being able to offer the sort of prediction on which one ought to base public policy.

For example: One likely impact of legalization, as Anderson and Rees note, is increased cannabis use among minors. Even if it were known that cannabis and alcohol are, at a given point in time, substitutes for minors, that wouldn't show that increased pot-smoking by sixteen-year-olds might not increase their risk of becoming heavy drinkers at twenty-one. And the Anderson and Rees methods don't even look for such long-term effects.

"It's not what you don't know that hurts you," said Will Rogers. "It's what you know that ain't so." Knowing what you don't know doesn't get your name in the newspaper. But it saves you having to eat your words. Since I think that cannabis legalization of some sort (1) is probably a good idea and (2) very likely to happen in any case, I devoutly hope that Anderson and Rees turn out to be right. But it seems clear to me that Pacula and Sevigny have the stronger argument. We just don't know.