Lies, Damned Lies, and Lazy Authors!

LinkedIn Article
February 22, 2015

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I have written about the dangers of tautological arguments in the past. (1)(2) At the heart of tautology is the logical fallacy of "*argumentum ad populum*" (the "argument to popularity"). This fallacy takes the general form of "*Well, EVERYONE knows that Napoleon Bonaparte was short*." The fact that Napoleon measured approximately 5' 7" and therefore, was pretty normal height for his day is largely unimportant to the person making the assertion.

The problem with tautological arguments is that they can make a fool of otherwise sincere and well meaning people. Worse still, those otherwise intelligent and sincere people then take those fallacies with them into their professional lives and use the fallacies to make important decisions that may harm society.

This morning, as I prepare a lecture on Indoor Air Quality that I will be presenting in a couple weeks in Atlanta, I choke with frustration when I try to track down the sources of false information. Information that is further disseminated at the expense of the credibility of the speaker, thus making a monkey out of that speaker. Usually, the speaker is an honest decent person, who has been duped. Without foundation, the speaker trusted the source of the information. As we saw with the discredited report from National Jewish

Health (4), that trust is often misplaced by authority, and the information is very, very, very, wrong.

A few months ago, I attended a wonderful three day Law Enforcement class on marijuana grow operations. The course was sponsored by the US Drug Enforcement Agency, and was facilitated by an extremely competent and knowledgeable member of the Royal Canadian Mounted Police.

Forming a Myth Step 1: During that course, the myth of "toxic moulds" in marijuana raised it's ever present (but false) head. The popular argument was presented that everyone knows that marijuana grow operations expose first responders to dangerous levels of toxic moulds, thus increasing the risk of injury and illness.

To support the contention, one of the disputants (a Police Sergeant with a Drug Task Force) cited the US D.E.A. document titled "The DEA Position On Marijuana" (Jan 2011).

Forming a Myth Step 2: An otherwise excellent publication, the DEA document does indeed present the argument and states:

> *"*Because cannabis plants are contaminated with a range of fungal spores, smoking marijuana may also increase the risk of respiratory exposure by infectious organisms (i.e., molds and fungi).*"*

To support its argument, the DEA references: "*Marijuana Associated with Same Respiratory Symptoms as Tobacco*," YALE News Release. January 13, 2005. http://www.yale.edu/opa/newsr/05-01-13-01.all.htm

But notice how the argument has already started to deviate from the original assertion. The original assertion was that first responders are exposed to dangerous levels of toxic mould at marijuana grow operations. Now, the citation is dealing with marijuana and tobacco.

Forming a Myth Step 3: So, if we track down the Yale newsletter, we find a web site,(3) wherein a certain Dr. Brent Moore (assistant professor of psychiatry at Yale School of Medicine) is quoted as saying:

> *"*In addition, marijuana smoking may increase risk of respiratory exposure by infectious organisms, such as fungi and molds, since cannabis plants are contaminated with a range of fungal spores.*"*

Dr. Moore then cites himself – (*Respiratory Effects of Marijuana and Tobacco Use in a U.S. Sample*; Moore BA, Augustson EM, et al ,J GEN INTERN MED 2004; 20:33–37, DOI: 10.1111/j.1525-1497.2004.40081.x)

Forming a Myth Step 4: So, we go to that publication and we see the following quote (again): "*In addition, marijuana smoking may increase risk of respiratory exposure by*

infectious organisms, such as fungi and molds, as cannabis plants are contaminated with a range of fungal spores."

Now, since Dr. Moore never actually assessed such exposures for his report, (and in fact mould exposures actually have nothing to do with his paper), Dr. Moore references a "study" by "Verweij PE, Kerremans JJ, Voss A, Meis JF. Fungal contamination of tobacco and marijuana. JAMA. 2000;284:2875."

Forming a Myth Step 5: So – we go down the citation chain trying to find the support for the initial argument that "First Responders are exposed to dangerous levels of toxic mould at marijuana grow operations." We find that the cited Verweij "study" is not a study at all, but is a simple letter to the editor. When we read Verweij and Kerremans' letter to the editor, we see that it has NOTHING at all to do with first responders OR marijuana grow operations.

In fact, Verweij and Kerremans are actually discussing something completely different – they are discussing the risk of invasive aspergillosis associated with **smoking** vegetable matter. Verweij and Kerremans conclude: "However, the risk of invasive aspergillosis associated with tobacco or marijuana smoking is **unclear**."

Wait... what? What does this have to do with the initial assertion that first responders are exposed to dangerous levels of "toxic moulds"? Answer – nothing. Nothing at all. It is a tautological chain of assertions that result in a myth that is further repeated in class rooms that are ostensibly meant to educate.

In fact, if we read the cited letter, we find that Verweij and Kerremans never actually even assessed the fungal or spore loading associated with smoking marijuana; they limited that aspect of their communication to tobacco and they conclude:

> "Although our results indicate that SMOKING appears to present a limited risk of inhaling fungal spores, the leaves themselves are a source of fungal spores."

OK – so, are we talking billions or millions of spores?

Well, they report the smoke of 40 of the 98 tobacco cigarettes tested were **negative** for mould spores. Of the remaining 58 cigarettes, one **may** have been as "high" as 270 fungal spores.

What does that mean? Well, assuming a mean puff volume of 50 cc and an average of nine puffs per cigarette; which consumes approximately 50% of the cigarette, that is 135 spores or 15 spores inhaled per puff.

Is 15 spores per puff elevated? Consider this: On the day when the notable junk-science report came out from National Jewish in Denver (4) indicating that "dangerous levels" of toxic moulds were present in marijuana grow operations (wherein the authors merely fabricated "facts" from thin air), the good citizens walking around Springfield, Missouri were inhaling 16,587 spores per hour. (5)

That is, the normal “healthy” outdoor air in Springfield, Missouri contained over 1,000 times more spores than someone smoking a particularly “contaminated” cigarette. So, the literature used to support the claim that first responders are exposed to dangerous levels of mould in marijuana operations really concluded that one might inhale 135 spores while smoking a cigarette while walking down a street wherein during the same time, they are inhaling 16,000 spores anyway.

So now we come full circle in the propagation of a myth: Viz: “Well, EVERYONE knows that studies have shown that first responders are exposed to dangerous levels of toxic mould in marijuana grow operations.” Source of this knowledge? One single letter to an editor that indicates that if you smoke one tobacco cigarette per hour you have a 50% chance of inhaling less than one tenth of one percent of the mould spores you would inhale anyway if you walk down the street in Springfield, Missouri.

As I ponder the lies, the damned lies and dishonest or lazy authors, I come to the obvious conclusion: “No wonder I drink.”

References:

1) http://webserver.computoredge.com/online.mvc?zone=NA&article=in1&issue=3110

2) http://forensic-applications.com/radon/reviews.html

3) http://www.eurekalert.org/pub_releases/2005-01/yu-maw011205.php

4) National Jewish Health: “Health Effects Associated with Indoor Marijuana Grow Operations,” John W. Martyny, Mike V. Van Dyke

5) Springfield County Health Department Springfield, http://health.springfieldmo.gov/index.aspx?NID=145s