

*The Cannabis Papers:
A citizen's guide to cannabinoids (2011)
By Publius*

#10

“Cannabinoids” succeed where “marijuana” fails

The word war

Words, be they new or old, both limit and extend thought. If we look at the word “Marijuana,” we will find a popular term of culture that is common both on the street and in mass media. However, like the words *pot, dope, ganja, and reefer, marijuana* is slang and has little value in a discussion about medicine, policy and human life. And it is often used by prohibitionists as a weapon of propaganda, where a single mention of the weed can incite reefer madness.

When discussing law and science, cannabis and cannabinoids are the standard and accepted terms. If the word “marijuana” were to be used in a scientific setting, the word “*marijuana-noid*” would have to be coined to discuss the “marijuana-modulators” of the ECS.

Back in the day, Harry Anslinger and the prohibitionists (no it's not a band) put slang in the founding law of prohibition – the 1937 Marihuana Tax Act. Anslinger is the one person we can all thank for federal cannabis prohibition. He is known for wacky marijuana quotes. Many are racist in tone and emphasis. Here's one about the plant that makes marijuana-noids: “*Marijuana is an addictive drug which produces in its user's insanity, criminality and death.*”

Anslinger's characterization of marijuana as understood in the 1930s crashes into our discussion of the ECS and cannabinoids. That's because the “evil of marijuana” is a cultural argument. Every scientific discussion in the 21st century uses the word “cannabinoid.” Often, in legal and scientific fields, the word “marijuana” is used to conjure up reefer-madness-like fears and to distract from a serious policy debate. It would be like using the “N-word” – arguably our nation's most notorious slang word – to talk about legal and scientific policies regarding a group of Americans.

In the scientific community, there is clearly an opposite view. Tom Brock, a researcher for the pharmaceutical company Cayman Chemical, speaks highly of cannabinoids and what they do. In an essay titled *Cannabinoids: to the neurons and beyond*, he imagines the blessings of healthy cannabinoid receptors (cue Beatles' song):

Imagine what could be achieved if signaling through these receptors could be controlled: happy, slim, and healthy people who remember that they're pain-free.

Well, as you can see, Brock has quite a different take than Anslinger did on these marijuana-noid thingies. Our **cannabinoider** asks us to imagine happy, slim and healthy people who remember they're pain-free. Our **prohibitionist** believes marijuana users are doomed addicted insane criminals. When reading Brock next to Anslinger, it's hard to imagine we are even discussing the same thing. In fact, we're not – the old saw marijuana as a deadly weed, the new as a promising plant. It's amazing what 70 years of experience and information will do.

There is also plenty of examples where the word “marijuana” is used in a joking way – just ask Cheech and Chong. Pharmaceutical, scientific and research communities don't think cannabinoids are a joke. Back in the early days of Mary's prohibition, no one knew humans had an ECS; now we even know how the body *produces* endocannabinoids. In 2009, Cayman Chemical published a 56-page cannabinoid marketing and research booklet. In it, Publius first learned of the two enzymes – *DAG lipase alpha and beta* – which the body needs to produce the endocannabinoid 2-AG, a cannabinoid fundamental to retrograde signaling. And this is no joke.

Translation according to Publius: $a + b = 2\text{-AG}$. This means two enzymes naturally come together to modulate cell signaling. Think of it as a relay race where 2-AG is the **informational baton**. Brock's research company is investigating ways to increase this relaying of information. They are trying to extend-and-enhance the half-life and travel time of 2-AG. – Why?

Because scientists understand that *cannabinoids are good*. They are working from the premise that our ECS has therapeutic value. Brock and the white-coats believe these include: “**reduced anxiety, reduced sensitivity and dependence to alcohol and nicotine, less age-related cardiac dysfunction, increased memory acquisition and extinction, and protection against neurodegeneration.**” One using the cultural term “marijuana” to understand and explain these biological processes will fail.

Defeating things like Alzheimer's is where cannabinoids are likely to succeed. Alzheimer's is a neurodegenerative disorder that steals and destroys one's ability to have a peaceful end to life. Little is understood about preventing or healing this disease. What is clear, according to the scientific data, is that the ECS is part of any solution. For example, a 2005 review found that “***cannabinoids succeed in preventing the neurodegenerative process occurring in [Alzheimer's] disease.***” A 2008 review came to the same conclusion – highlighting the fact that cannabinoids “***represent an endogenous adaptive response aimed at counteracting***” the underlying causes of Alzheimer's.

The horizon looks bright as well. Beyond supporting our basic health, studies show that cannabinoids increase *neurogenesis* – the process by which we grow brain cells. Current research suggests the CB2 receptor “***may assist in the treatment of neuropathologies by increasing neurogenesis.***”

The shift is here – from slang to science, from marijuana to cannabinoids. Marijuana will remain a cultural icon, but please keep politics out of the petri dish. This plant may save your life one day.

Publius

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Search terms

Alzheimer's disease and cannabinoids; Cayman Chemical and cannabinoids; neuroprotection and cannabinoids; neurogenesis, hippocampus and cannabinoids; CB2 receptor and neurogenesis; George Lakoff.

Research and selected readings

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