

The Book of the Is: A book on bridges (2013)

By Bryan W. Brickner

*"Don't ask'em what it was, tell'em what it is."
Phish*

Excerpt from Chapter 4 Epimorphosis (Or, Where's that confounded bridge?)

Sections 9-12

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Cannabinoids are the reason President Bush is finding enormous health benefits from running. He started running in 1972 (age 25) after getting out of the service. He said in the *Runner's World* interview that he started running because of health concerns: *"Back then, I was a man known to drink a beer or two. And over time, I'm convinced that running helped me quit drinking and smoking."*

Running produces the cannabinoid anandamide; it is activity (exercise) that increases anandamide levels. Repetitive action stimulates the production of cannabinoids; this production causes the healing effect that President Bush and others report. Later in the interview he is asked about running and how it helped him quit alcohol:

Definitely. As a runner, I quickly realized what it felt like to be healthy and I already knew what it felt like to be unhealthy. If you're drinking too much and you're running to cure a hangover, pretty soon you have to make a choice. Do you want to keep getting a hangover or do you want to feel the way you do after a run? So running is a way to heal people. Running is something that just makes you feel fantastic.

Yes, President Bush and I share a love for cannabinoids.

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I'm glad President Bush can run and enjoy exercising his cannabinoid system; that's normal. We wouldn't think of coercing citizens to run, not in the land of the free. Listen to some of your favorite musicians and think of coercing them to be "normal."

According to a new line of synthetic (pharmaceutical) cannabinoids, a new normal may be on the horizon; it's called *Rimonabant* and it's being marketed as treatment for "marijuana dependence." The National Institute of Drug Abuse (NIDA) has even claimed one dose will cure you of marijuana dependence. Wow. Lucky for music lovers these future "treatments" weren't around any earlier. Any Jazz fans out there? Try taking cannabis out of the beginning of Jazz and you'd be taking away Jazz. I don't

mean you have to be high on cannabinoids to enjoy Jazz, but a certain one-of-a-kind musician named Louis Armstrong, well he called pot his friend (his assistant) and I believe he would have agreed with President Bush; one can find “enormous psychological benefit,” healing and “a clearing of the mind” by activating your cannabinoid system.

The forgetting, well, I have a theory on that too; I’ll bet it let Armstrong forget a lot of the racism he had to face, or anything else we all go through. Cannabinoids don’t make you forget who you are; President Bush doesn’t forget who he is while running. You don’t forget what is important to you or what you need to do; the highs let you pause and forget the day for a moment. Many people have experienced such highs and describe the same benefits as President Bush; they just find relief and healing from consuming a plant instead of from running.

What of those who don’t have the same running ability as President Bush, or who can’t run or exercise as easily, but they want the same benefits from cannabinoids? And lots of people have activated their cannabinoid system through cannabis to quit alcohol and tobacco – just like President Bush.

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The *Scientific American* article has a diagram on “retrograde signaling.” This four part diagram is discussed, in print and online, in six sentences that provide a clear example of a sense~chemical combination (a sensorium). Cannabinoids are the main messengers in *retrograde signaling*, a process where cells *talk back* to each other.

The six sentences show sense and chemicals working together to create the basis of action. Also, given the topic, the body’s brain, one of the advantages we have is that we all have what we are discussing – a brain (so turn yours to *On*).

The first sentence from the diagram (page 88) is this:

1. *Researchers have found that endogenous cannabinoids (endo-cannabinoids) participate in retrograde signaling, a previously unknown form of communication in the brain.*

So science is saying cannabinoids participate in a previously unknown form of communication in the brain, retrograde signaling. The next sentence explains what that means:

2. *Rather than flowing forward in the usual way from a presynaptic (neurotransmitter-emitting) neuron to a postsynaptic (recipient) one, endocannabinoids work backward, traveling from the postsynaptic cell to the presynaptic one.*

Previously, science could only see cells communicating in one direction. They thought one cell emitted information and another cell received information. After the discovery of cannabinoids and their receptors, they noticed that cells were modulating their activity without receiving any information. Something in the brain was telling cells to

stop firing, which then allowed other cells to fire (to be heard, so to speak). Next, using 2-AG as the example, we find that:

1. *The endocannabinoid 2-AG released from a postsynaptic cell can, for example, cause a presynaptic cell to decrease its secretion of the inhibitory neurotransmitter GABA onto the postsynaptic cell.*

Here we have an example of neurotransmitters in action. From a so-called receiving cell, post-synapse (meaning message conveyed), we see the creation and release of the endocannabinoid 2-AG. This cannabinoid tells the emitting cell something like, “Hey, slow down there,” thus decreasing the creation of another neurotransmitter called GABA. This signaling back is only the first step in retrograde signaling (there’s more); it also allows other things to happen:

2. *If GABA from a presynaptic neuron hits a postsynaptic cell at the same time as excitatory signals (such as those carried by the neurotransmitter glutamate) reach the same cell, the GABA can block the postsynaptic cell from firing.*

Here they are saying more than one thing can happen in the brain at one time. One neurotransmitter (GABA) can block an excitatory neurotransmitter like glutamate – but then:

3. *If, however, changes in calcium levels in the postsynaptic neuron trigger the production of 2-AG, this endocannabinoid will travel back to its receptor (CB1) on the GABA-producing neuron.*

If there is enough 2-AG produced because of the rising calcium levels in the brain (a sign the brain is active), then the CB1 receptor activates because of the 2-AG and ... :

4. *In a process known as depolarized-induced suppression of inhibition (DSI), it will then prevent the release of GABA and thus allow the excitatory signals to activate the postsynaptic cell.*

There’s the *retrograde* kicker: the cannabinoid, in telling one cell to stop firing for a moment produces the conditions for “DSI” (allowing other signals to be sent and received). Basically, DSI tells one cell to be quiet for a moment so that another cell can talk, making it fundamental to cell communication.

That brings us back to *Rimonabant* and curing “marijuana dependence.” The pharmaceutical companies are well aware of the cannabinoid system; they use synthetic cannabinoids in research and are trying to market them. *Rimonabant* is being presented to the Food and Drug Administration for US sale. Researchers at NIDA gleefully reported that a single dose of the drug blocks the effects of smoked marijuana; unfortunately, it also *blocks* endocannabinoids such as anandamide, which means it also blocks retrograde signaling (DSI), *a previously unknown form of communication in the brain.*

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Jazzercise – that’s right, I mentioned jazzercise, didn’t I. You might not miss it if it disappeared, but I hear it’s good exercise. Many would miss Jazz though, as it was a pretty good invention. Today, Armstrong would be labeled a marijuana addict and perhaps even put into coerced treatment. What an odd political thought: *no Jazz because all the jazzers were sent to treatment and cured.* Armstrong was a cannabis consumer, that’s for sure, and he wouldn’t understand today’s cannabis fuss.

It’s been said that Armstrong told stories with his cornet. At the 2001 tribute, *From Lincoln Center – Louis Armstrong: Master Interpreter*, Ed Bradley (of *60 Minutes* fame) said these kind words about Armstrong’s Chicago music-making days:

On a series of records made in Chicago during the 1920s, Louis Armstrong almost single-handedly set out the foundations of Jazz. Some of the most fertile and overwhelming music in all of recorded Jazz gushes from those old discs by Louis Armstrong’s Hot Five and Hot Seven Bands.

Later on in the tribute, when they are talking about the great Joe “King” Oliver and the New Orleans roots of Jazz, Bradley tells us about how Oliver and Armstrong wowed’em in Chicago:

Oliver taught Armstrong about breaks – short unaccompanied solos played at the end of a musical phrase. When Armstrong played with Oliver, the sound of their two powerful horns playing breaks – in unison – amazed the crowd that packed Chicago’s Lincoln Gardens. The secret? Oliver would tip Armstrong off by surreptitiously fingering what he was going to play.

When it comes to Armstrong, his music, and his cannabis use, the show brings them together but only in a general way. Here’s what Bradley said:

Alcohol and drugs figure into the story of many a Jazz musician but Armstrong was very health-conscious. He didn’t drink heavily, but acknowledged an affection for marijuana, which he found soothing and medicinal. Armstrong and Earl Hines named one of their collaborations after one of marijuana’s more closely-held nicknames, “Muggles.”

Trumpeter Nicholas Payton and pianist Eric Reed then performed the song.

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